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THE MISCELLANEOUS WRITINGS
OF
JOHN FISKE

WITH MANY PORTRAITS OF ILLUSTRIOUS
PHILOSOPHERS, SCIENTISTS, AND
OTHER MEN OF NOTE

IN TWELVE VOLUMES

VOLUME IX

John Fiske.

STUDIES IN RELIGION

BEING

THE DESTINY OF MAN; THE IDEA OF
GOD; THROUGH NATURE TO
GOD; LIFE EVERLASTING

BY

JOHN FISKE

BOSTON AND NEW YORK
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NOTE

In the present volume the publishers have brought together for the first time the four studies in religious philosophy which were issued under the titles "The Destiny of Man viewed in the Light of his Origin" (1884), "The Idea of God as affected by Modern Knowledge" (1885), "Through Nature to God" (1899), and "Life Everlasting" (1901). They are here reprinted in the order of publication. The original prefaces, which have been scrupulously retained, sufficiently explain the aim of each treatise and throw light upon the development of Mr. Fiske's thought regarding the great subjects which here occupy his attention. None of his books have reached a wider audience, or have been read with more profound interest.

4 Park Street, Boston, *February*, 1902.

CONTENTS

THE DESTINY OF MAN VIEWED IN THE LIGHT OF HIS ORIGIN

Preface 1
I. Man's Place in Nature, as affected by the Copernican Theory 3
II. Man's Place in Nature, as affected by Darwinism 9
III. On the Earth there will never be a Higher Creature than Man 15
IV. The Origin of Infancy 22
V. The Dawning of Consciousness . . . 27
VI. Lengthening of Infancy, and Concomitant Increase of Brain-Surface 34
VII. Change in the Direction of the Working of Natural Selection 39
VIII. Growing Predominance of the Psychical Life 42
IX. The Origins of Society and of Morality . 45
X. Improvableness of Man 49
XI. Universal Warfare of Primeval Men . . 53
XII. First checked by the Beginnings of Industrial Civilization 56
XIII. Methods of Political Development, and Elimination of Warfare 59
XIV. End of the Working of Natural Selection upon Man. Throwing off the Brute-Inheritance 67
XV. The Message of Christianity 73
XVI. The Question as to a Future Life . . 76

CONTENTS

THE IDEA OF GOD AS AFFECTED BY MODERN KNOWLEDGE

Preface 89
I. Difficulty of expressing the Idea of God so that it can be readily understood . . . 111
II. The Rapid Growth of Modern Knowledge . 119
III. Sources of the Theistic Idea . . . 131
IV. Development of Monotheism . . . 138
V. The Idea of God as Immanent in the World 145
VI. The Idea of God as remote from the World 150
VII. Conflict between the two Ideas, commonly misunderstood as a Conflict between Religion and Science 158
VIII. Anthropomorphic Conceptions of God . . 169
IX. The Argument from Design . . . 175
X. Simile of the Watch replaced by Simile of the Flower 182
XI. The Craving for a Final Cause . . 186
XII. Symbolic Conceptions 191
XIII. The Eternal Source of Phenomena . . 194
XIV. The Power that makes for Righteousness . 204

THROUGH NATURE TO GOD

Preface 215

THE MYSTERY OF EVIL

I. The Serpent's Promise to the Woman . . 225
II. The Pilgrim's Burden 229
III. Manichæism and Calvinism . . . 234
IV. The Dramatic Unity of Nature . . 240
V. What Conscious Life is made of . . . 244
VI. Without the Element of Antagonism there could be no Consciousness, and therefore no World 249
VII. A Word of Caution 253
VIII. The Hermit and the Angel . . . 256

IX. Man's Rise from the Innocence of Brutehood 260
X. The Relativity of Evil 265

THE COSMIC ROOTS OF LOVE AND SELF-SACRIFICE

I. The Summer Field, and what it tells us . 271
II. Seeming Wastefulness of the Cosmic Process 276
III. Caliban's Philosophy 281
IV. Can it be that the Cosmic Process has no Relation to Moral Ends? 283
V. First Stages in the Genesis of Man . . 287
VI. The Central Fact in the Genesis of Man . 291
VII. The Chief Cause of Man's lengthened Infancy 293
VIII. Some of its Effects 299
IX. Origin of Moral Ideas and Sentiments . . 304
X. The Cosmic Process exists purely for the Sake of Moral Ends 309
XI. Maternity and the Evolution of Altruism . 315
XII. The Omnipresent Ethical Trend . . 322

THE EVERLASTING REALITY OF RELIGION

I. "Deo erexit Voltaire" 327
II. The Reign of Law, and the Greek Idea of God 337
III. Weakness of Materialism . . . 341
IV. Religion's First Postulate: the Quasi-Human God 349
V. Religion's Second Postulate: the Undying Human Soul 353
VI. Religion's Third Postulate: the Ethical Significance of the Unseen World . . . 356
VII. Is the Substance of Religion a Phantom, or an Eternal Reality? 358
VIII. The Fundamental Aspect of Life . . . 360
IX. How the Evolution of Senses expands the World 364
X. Nature's Eternal Lesson is the Everlasting Reality of Religion 367

CONTENTS

LIFE EVERLASTING

Life Everlasting 377
Notes 417
Index 421

The frontispiece portrait of Dr. Fiske is from a photograph in 1889. The other portrait was taken in 1897.

THE DESTINY OF MAN
VIEWED IN THE LIGHT
OF HIS ORIGIN

TO

MY CHILDREN,

MAUD, HAROLD, CLARENCE, RALPH,
ETHEL, AND HERBERT,

This Essay

IS LOVINGLY DEDICATED

PREFACE

HAVING been invited to give an address before the Concord School of Philosophy this summer, upon some subject relating to the question of immortality there under discussion, it seemed a proper occasion for putting together the following thoughts on the origin of Man and his place in the universe. In dealing with the unknown, it is well to take one's start a long way within the limits of the known. The question of a future life is generally regarded as lying outside the range of legitimate scientific discussion. Yet while fully admitting this, one does not necessarily admit that the subject is one with regard to which we are forever debarred from entertaining an opinion. Now our opinions on such transcendental questions must necessarily be affected by the total mass of our opinions on the questions which lie within the scope of scientific inquiry; and from this point of view it becomes of surpassing interest to trace the career of Humanity within that segment of the universe which is accessible to us. The teachings of the doctrine of evolution as to the origin and destiny of Man have, moreover, a very great speculative and practical value of their own, quite apart from their bearings upon any ultimate questions. The body of this essay is accordingly devoted to setting forth these teachings in what I conceive to be their true light; while their transcendental implications are reserved for the sequel.

As the essay contains an epitome of my own original contributions to the doctrine of evolution, I have added at the end a short list of references to other works of mine, where the points here briefly mentioned are more fully argued and illustrated.[1] The views regarding the progress of human society, and the elimination of warfare, are set forth at greater length in a little book now in the press, and soon to appear, entitled "American Political Ideas."

PETERSHAM, *September* 6, 1884.

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[1] [In the present edition these references are at the foot of the page.]

THE DESTINY OF MAN

I

MAN'S PLACE IN NATURE, AS AFFECTED BY THE COPERNICAN THEORY

WHEN we study the Divine Comedy of Dante — that wonderful book wherein all the knowledge and speculation, all the sorrows and yearnings, of the far-off Middle Ages are enshrined in the glory of imperishable verse — we are brought face to face with a theory of the world and with ways of reasoning about the facts of nature which seem strange to us to-day, but from the influence of which we are not yet, and doubtless never shall be, wholly freed. A cosmology grotesque enough in the light of later knowledge, yet wrought out no less carefully than the physical theories of Lucretius, is employed in the service of a theology cumbrous in its obsolete details, but resting upon fundamental truths which mankind can never safely lose sight of. In the view of Dante and of that phase of human culture which found in him its clearest and sweetest voice, this earth, the fair home of man, was placed in the centre of a universe wherein all things were ordained for his sole behoof: the sun to give him light and warmth, the stars in their courses to preside over his strangely checkered destinies, the winds to blow, the floods to rise, or the fiend of pestilence to stalk abroad over the land,—all for the blessing, or the warning, or the chiding, of the chief among God's creatures, Man. Upon some such conception as this, indeed, all theology would seem naturally to rest. Once dethrone Humanity, regard it as a mere local incident in an endless and aimless series of cosmical changes, and you arrive at a doctrine which, under whatever specious name it may be veiled, is at bottom neither more nor less than Atheism. On its metaphysical side Atheism is the denial of anything psychical in the universe outside of human consciousness; and it is almost inseparably associated with the materialistic interpretation of human consciousness as the ephemeral result of a fleeting collocation of particles of matter. Viewed upon this side, it is easy to show that Atheism is very bad metaphysics, while the materialism which goes with it is utterly condemned by modern science.[1] But our feeling toward Atheism goes much deeper than the mere recognition of it as philosophically untrue. The mood in which we condemn it is not at all like the mood in which we reject the corpuscular theory of light or Sir G. C. Lewis's vagaries on the subject of Egyptian hieroglyphics. We are wont to look upon Atheism with unspeakable horror and loathing. Our moral sense revolts against it no less than our intelligence; and this is because, on its practical side, Atheism would remove Humanity from its peculiar position in the world, and make it cast in its lot with the grass that withers and the beasts that perish; and thus the rich and varied life of the universe, in all the ages of its wondrous duration, becomes deprived of any such element of purpose as can make it intelligible to us or appeal to our moral sympathies and religious aspirations.

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[1] *Outlines of Cosmic Philosophy*, part iii. ch. iv.

And yet the first result of some of the grandest and most irrefragable truths of modern science, when newly discovered and dimly comprehended, has been to make it appear that Humanity must be rudely unseated from its throne in the world and made to occupy an utterly subordinate and trivial position; and it is because of this mistaken view of their import that the Church has so often and so bitterly opposed the teaching of such truths. With the advent of the Copernican astronomy the funnel-shaped Inferno, the steep mountain of Purgatory crowned with its terrestrial paradise, and those concentric spheres of Heaven wherein beatified saints held weird and subtle converse, all went their way to the limbo prepared for the childlike fancies of untaught minds, whither Hades and Valhalla had gone before them. In our day it is hard to realize the startling effect of the discovery that Man does not dwell at the centre of things, but is the denizen of an obscure and tiny speck of cosmical matter quite invisible amid the innumerable throng of flaming suns that make up our galaxy. To the contemporaries of Copernicus the new theory seemed to strike at the very foundations of Christian theology. In a universe where so much had been made without discernible reference to Man, what became of that elaborate scheme of salvation which seemed to rest upon the assumption that the career of Humanity was the sole object of God's creative forethought and fostering care? When we bear this in mind, we see how natural and inevitable it was that the Church should persecute such men as Galileo and Bruno. At the same time it is instructive to observe that, while the Copernican astronomy has become firmly established in spite of priestly opposition, the foundations of Christian theology have not been shaken thereby. It is not that the question which once so sorely puzzled men has ever been settled, but that it has been outgrown. The speculative necessity for man's occupying the largest and most central spot in the universe is no longer felt. It is recognized as a primitive and childish notion. With our larger knowledge we see that these vast and fiery suns are after all but the Titan-like *servants* of the little planets which they bear with them in their flight through the abysses of space. Out from the awful gaseous turmoil of the central mass dart those ceaseless waves of gentle radiance that, when caught upon the surface of whirling worlds like ours, bring forth the endlessly varied forms and the endlessly complex movements that make up what we can see of life. And as when God revealed himself to his ancient prophet He came not in the earthquake or the tempest, but in a voice that was still and small, so that divine spark the Soul, as it takes up its brief abode in this realm of fleeting phenomena, chooses not the central sun where elemental forces forever blaze and clash, but selects an outlying terrestrial nook where seeds may germinate in silence, and where through slow fruition the mysterious forms of organic life may come to take shape and thrive. He who thus looks a little deeper into the secrets of nature than his forefathers of the sixteenth century may well smile at the quaint conceit that man cannot be the object of God's care unless he occupies an immovable position in the centre of the stellar universe.

II

MAN'S PLACE IN NATURE, AS AFFECTED BY DARWINISM

WHEN the Copernican astronomy was finally established through the discoveries of Kepler and Newton, it might well have been pronounced the greatest scientific achievement of the human mind; but it was still more than that. It was the greatest revolution that had ever been effected in Man's views of his relations to the universe in which he lives, and of which he is — at least during the present life — a part. During the nineteenth century, however, a still greater revolution has been effected. Not only has Lyell enlarged our mental horizon in time as much as Newton enlarged it in space, but it appears that throughout these vast stretches of time and space with which we have been made acquainted there are sundry well-marked changes going on. Certain definite paths of development are being pursued; and around us on every side we behold worlds, organisms, and societies in divers stages of progress or decline. Still more, as we examine the records of past life upon our globe, and study the mutual relations of the living things that still remain, it appears that the higher forms of life — including Man himself — are the modified descendants of lower forms. Zoölogically speaking, Man can no longer be regarded as a creature apart by himself. We cannot erect an order on purpose to contain him, as Cuvier tried to do; we cannot even make a separate family for him. Man is not only a vertebrate, a mammal, and a primate, but he belongs, as a genus, to the catarrhine family of apes. And just as lions, leopards, and lynxes — different genera of the cat family — are descended from a common stock of carnivora, back to which we may also trace the pedigrees of dogs, hyænas, bears, and seals; so the various genera of platyrrhine and catarrhine apes, including Man, are doubtless descended from a common stock of primates, back to which we may also trace the converging pedigrees of monkeys and lemurs, until their ancestry becomes indistinguishable from that of rabbits and squirrels. Such is the conclusion to which the scientific world has come within a quarter of a century from the publication of Mr. Darwin's "Origin of Species;" and there is no more reason for supposing that this conclusion will ever be gainsaid than for supposing that the Copernican astronomy will some time be overthrown and the concentric spheres of Dante's heaven reinstated in the minds of men.

It is not strange that this theory of man's origin, which we associate mainly with the name of Mr. Darwin, should be to many people very unwelcome. It is fast bringing about a still greater revolution in thought than that which was heralded by Copernicus; and it naturally takes some time for the various portions of one's theory of things to become adjusted, one after another, to so vast and sweeping a change. From many quarters the cry goes up, — If this be true, then Man is at length cast down from his high position in the world. "I will not be called a mammal, or the son of a mammal!" once exclaimed an acquaintance of mine who perhaps had been brought up by hand. Such expressions of feeling are crude, but the feeling is not unjustifiable. It is urged that if man is physically akin to a baboon, as pigs are akin to horses, and cows to deer, then Humanity can in nowise be regarded as occupying a peculiar place in the universe; it becomes a mere incident in an endless series of changes, and how can we say that the same process of evolution that has produced mankind may not by and by produce something far more perfect? There was a time when huge birdlike reptiles were the lords of creation, and after these had been "sealed within the iron hills" there came successive dynasties of mammals; and as the iguanodon gave place to the great Eocene marsupials, as the mastodon and the sabre-toothed lion have long since vanished from the scene, so may not Man by and by disappear to make way for some higher creature, and so on forever? In such case, why should we regard Man as in any higher sense the object of Divine care than a pig? Still stronger does the case appear when we remember that those countless adaptations of means to ends in nature, which since the time of Voltaire and Paley we have been accustomed to cite as evidences of creative design, have received at the hands of Mr. Darwin a very different interpretation. The lobster's powerful claw, the butterfly's gorgeous tints, the rose's delicious fragrance, the architectural instinct of the bee, the astonishing structure of the orchid, are no longer explained as the results of contrivance. That simple but wasteful process of survival of the fittest, through which such marvellous things have come into being, has little about it that is analogous to the ingenuity of human art. The infinite and eternal Power which is thus revealed in the physical life of the universe seems in nowise akin to the human soul. The idea of beneficent purpose seems for the moment to be excluded from nature, and a blind process, known as Natural Selection, is the deity that slumbers not nor sleeps. Reckless of good and evil, it brings forth at once the mother's tender love for her infant and the horrible teeth of the ravening shark, and to its creative indifference the one is as good as the other.

In spite of these appalling arguments the man of science, urged by the single-hearted purpose to ascertain the truth, be the consequences what they may, goes quietly on and finds that the terrible theory must be adopted; the fact of man's consanguinity with dumb beasts must be admitted. In reaching this conclusion, the man of science reasons upon the physical facts within his reach, applying to them the same principles of common-sense whereby our every-day lives are successfully guided; and he is very apt to smile at the methods of those people who, taking hold of the question at the wrong end, begin by arguing about all manner of fancied consequences. For his knowledge of the history of human thinking assures him that such methods have through all past time proved barren of aught save strife, while his own bold yet humble method is the only one through which truth has ever been elicited. To pursue unflinchingly the methods of science requires dauntless courage and a faith that nothing can shake. Such courage and such loyalty to nature brings its own reward. For when once the formidable theory is really understood, when once its implications are properly unfolded, it is seen to have no such logical consequences as were at first ascribed to it. As with the Copernican astronomy, so with the Darwinian biology, we rise to a higher view of the workings of God and of the nature of Man than was ever attainable before. So far from degrading Humanity, or putting it on a level with the animal world in general, the Darwinian theory shows us distinctly for the first time how the creation and the perfecting of Man is the goal toward which Nature's work has all the while been tending. It enlarges tenfold the significance of human life, places it upon even a loftier eminence than poets or prophets have imagined, and makes it seem more than ever the chief object of that creative activity which is manifested in the physical universe.

III

ON THE EARTH THERE WILL NEVER BE A HIGHER CREATURE THAN MAN

IN elucidating these points, we may fitly begin by considering the question as to the possibility of the evolution of any higher creature than Man, to whom the dominion over this earth shall pass. The question will best be answered by turning back and observing one of the most remarkable features connected with the origin of Man and with his superiority over other animals. And let it be borne in mind that we are not now about to wander through the regions of unconditional possibility. We are not dealing with vague general notions of development, but with the scientific Darwinian theory, which alleges development only as the result of certain rigorously defined agencies. The chief among these agencies is Natural Selection. It has again and again been illustrated how by the cumulative selection and inheritance of slight physical variations generic differences, like those between the tiger and the leopard, or the cow and the antelope, at length arise;

and the guiding principle in the accumulation of slight physical differences has been the welfare of the species. The variant forms on either side have survived while the constant forms have perished, so that the lines of demarcation between allied species have grown more and more distinct, and it is usually only by going back to fossil ages that we can supply the missing links of continuity. In the desperate struggle for existence no peculiarity, physical or psychical, however slight, has been too insignificant for natural selection to seize and enhance; and the myriad fantastic forms and hues of animal and vegetal life illustrate the seeming capriciousness of its workings. Psychical variations have never been unimportant since the appearance of the first faint pigment-spot which by and by was to translate touch into vision, as it developed into the lenses and humours of the eye.[1] Special organs of sense and the lower grades of perception and judgment were slowly developed through countless ages, in company with purely physical variations of shape of foot, or length of neck, or complexity of stomach, or thickness of hide. At length there came a wonderful moment — silent and unnoticed, as are the beginnings of all great revolutions. Silent and unnoticed, even as the day of the Lord which cometh like a thief in the night, there arrived that wonderful moment at which psychical changes began to be of more use than physical changes to the brute ancestor of Man. Through further ages of ceaseless struggle the profitable variations in this creature occurred oftener and oftener in the brain, and less often in other parts of the organism, until by and by the size of his brain had been doubled and its complexity of structure increased a thousand-fold, while in other respects his appearance was not so very different from that of his brother apes.[1] Along with this growth of the brain, the complete assumption of the upright posture, enabling the hands to be devoted entirely to prehension and thus relieving the jaws of that part of their work, has coöperated in producing that peculiar contour of head and face which is the chief distinguishing mark of physical Man. These slight anatomical changes derive their importance entirely from the prodigious intellectual changes in connection with which they have been produced; and these intellectual changes have been accumulated until the distance, psychically speaking, between civilized man and the ape is so great as to dwarf in comparison all that had been achieved in the process of evolution down to the time of our half-human ancestor's first appearance. No fact in nature is fraught with deeper meaning than this two-sided fact of the extreme physical similarity and enormous psychical divergence between Man and the group of animals to which he traces his pedigree. It shows that when Humanity began to be evolved an entirely new chapter in the history of the universe was opened. Henceforth the life of the nascent soul came to be first in importance, and the bodily life became subordinated to it. Henceforth it appeared that, in this direction at least, the process of zoölogical change had come to an end, and a process of psychological change was to take its place. Henceforth along this supreme line of generation there was to be no further evolution of new species through physical variation, but through the accumulation of psychical variations one particular species was to be indefinitely perfected and raised to a totally different plane from that on which all life had hitherto existed. Henceforth, in short, the dominant aspect of evolution was to be not the genesis of species, but the progress of Civilization.

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[1] *Outlines of Cosmic Philosophy*, part ii. ch. xiv.

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[1] *Outlines of Cosmic Philosophy,* part ii. ch. xxi.; *Darwinism, and Other Essays,* iii.

As we thoroughly grasp the meaning of all this, we see that upon the Darwinian theory it is impossible that any creature zoölogically distinct from Man and superior to him should ever at any future time exist upon the earth. In the regions of unconditional possibility it is open to any one to argue, if he chooses, that such a creature may come to exist; but the Darwinian theory is utterly opposed to any such conclusion. According to Darwinism, the creation of Man is still the goal toward which Nature tended from the beginning. Not the production of any higher creature, but the perfecting of Humanity, is to be the glorious consummation of Nature's long and tedious work. Thus we suddenly arrive at the conclusion that Man seems now, much more clearly than ever, the chief among God's creatures. On the primitive barbaric theory, which Mr. Darwin has swept away, Man was suddenly flung into the world by the miraculous act of some unseen and incalculable Power acting from without; and whatever theology might suppose, no scientific reason could be alleged why the same incalculable Power might not at some future moment, by a similar miracle, thrust upon the scene some mightier creature in whose presence Man would become like a sorry beast of burden. But he who has mastered the Darwinian theory, he who recognizes the slow and subtle process of evolution as the way in which God makes things come to pass, must take a far higher view. He sees that in the deadly struggle for existence which has raged throughout countless æons of time, the whole creation has been groaning and travailing together in order to bring forth that last consummate specimen of God's handiwork, the Human Soul.

To the creature thus produced through a change in the direction in which natural selection has worked, the earth and most of its living things have become gradually subordinated. In all the classes of the animal and vegetal worlds many ancient species have become extinct, and many modern species have come into being, through the unchecked working of natural selection, since Man became distinctively human. But in this respect a change has long been coming over the face of nature. The destinies of all other living things are more and more dependent upon the will of Man. It rests with him to determine, to a great degree, what plants and animals shall remain upon the earth and what shall be swept from its surface. By unconsciously imitating the selective processes of Nature, he long ago wrought many wild species into forms subservient to his needs. He has created new varieties of fruit and flower and cereal grass, and has reared new breeds of animals to aid him in the work of civilization; until at length he is beginning to acquire a mastery over mechanical and molecular and chemical forces which is doubtless destined in the future to achieve marvellous results whereof to-day we little dream. Natural selection itself will by and by occupy a subordinate place in comparison with selection by Man, whose appearance on the earth is thus seen more clearly than ever to have opened an entirely new chapter in the mysterious history of creation.

IV

THE ORIGIN OF INFANCY

BUT before we can fully understand the exalted position which the Darwinian theory assigns to Man, another point demands consideration. The natural selection of psychical peculiarities does not alone account for the origin of Man, or explain his most signal difference from all other animals. That difference is unquestionably a difference in kind, but in saying this one must guard against misunderstanding. Not only in the world of organic life, but throughout the known universe, the doctrine of evolution regards differences in kind as due to the gradual accumulation of differences in degree. To cite a very simple case, what differences of kind can be more striking than the differences between a nebula, a sun, a planet like the earth, and a planet like our moon? Yet these things are simply examples of cosmical matter at four different stages of cooling. The physical differences between steam, water, and ice afford a more familiar example. In the organic world the perpetual modification of structures that has been effected through natural selection exhibits countless instances of differences in kind which have risen from the accumulation of differences in degree. No one would hesitate to call a horse's hoof different in kind from a cat's paw; and yet the horse's lower leg and hoof are undoubtedly developed from a five-toed paw. The most signal differences in kind are wont to arise when organs originally developed for a certain purpose come to be applied to a very different purpose, as that change of the fish's air-bladder into a lung which accompanied the first development of land vertebrates. But still greater becomes the revolution when a certain process goes on until it sets going a number of other processes, unlocking series after series of causal agencies until a vast and complicated result is reached, such as could by no possibility have been foreseen. The creation of Man was one of these vast and complicated results due to the unlocking of various series of causal agencies; and it was the beginning of a deeper and mightier difference in kind than any that slowly-evolving Nature had yet witnessed.

I have indicated, as the moment at which the creation of mankind began, the moment when psychical variations became of so much more use to our ancestors than physical variations that they were seized and enhanced by natural selection, to the comparative neglect of the latter. Increase of intellectual capacity, in connection with the developing brain of a single race of creatures, now became the chief work of natural selection in originating Man; and this, I say, was the opening of a new chapter, the last and most wonderful chapter, in the history of creation. But the increasing intelligence and enlarged experience of half-human man now set in motion a new series of changes which greatly complicated the matter. In order to understand these changes, we must consider for a moment one very important characteristic of developing intelligence.

The simplest actions in which the nervous system is concerned are what we call reflex actions. All the visceral actions which keep us alive from moment to moment, the movements of the heart and lungs, the contractions of arteries, the secretions of glands, the digestive operations of the stomach and liver, belong to the class of reflex actions. Throughout the animal world these acts are repeated, with little or no variation, from birth until death, and the tendency to perform them is completely organized in the nervous system before birth. Every animal breathes and digests as well at the beginning of his life as he ever does. Contact with air and food is all that is needed, and there is nothing to be learned. These actions, though they are performed by the nervous system, we do not class as psychical, because they are nearly or quite unattended by consciousness. The psychical life of the lowest animals consists of a few simple acts directed toward the securing of food and the avoidance of danger, and these acts we are in the habit of classing as instinctive. They are so simple, so few, and so often repeated, that the tendency to perform them is completely organized in the nervous system before birth. The animal takes care of himself as soon as he begins to live. He has nothing to learn, and his career is a simple repetition of the careers of countless ancestors. With him heredity is everything, and his individual experience is next to nothing.

As we ascend the animal scale till we come to the higher birds and mammals, we find a very interesting and remarkable change beginning. The general increase of intelligence involves an increasing variety and complication of experiences. The acts which the animal performs in the course of its life become far more numerous, far more various, and far more complex. They are therefore severally repeated with less frequency in the lifetime of each individual. Consequently the tendency to perform them is not completely organized in the nervous system of the offspring before birth. The short period of antenatal existence does not afford time enough for the organization of so many and such complex habitudes and capacities. The process which in the lower animals is completed before birth is in the higher animals left to be completed after birth. When the creature begins its life it is not completely organized. Instead of the power of doing all the things which its parents did, it starts with the power of doing only some few of them ; for the rest it has only latent capacities which need to be brought out by its individual experience after birth. In other words, it begins its separate life not as a matured creature, but as an infant which needs for a time to be watched and helped.

V

THE DAWNING OF CONSCIOUSNESS

HERE we arrive at one of the most wonderful moments in the history of creation, — the moment of the first faint dawning of consciousness, the foreshadowing of the true life of the soul. Whence came the soul we no more know than we know whence came the universe. The primal origin of consciousness is hidden in the depths of the bygone eternity. That it cannot possibly be the product of any cunning arrangement of material particles is demonstrated beyond peradventure by what we now know of the correlation of physical forces.[1] The Platonic view of the soul, as a spiritual substance, an effluence from Godhood, which under certain conditions becomes incarnated in perishable forms of matter, is doubtless the view most consonant with the present state of our knowledge. Yet while we know not the primal origin of the soul, we have learned something with regard to the conditions under which it has become incarnated in material forms. Modern psychology has something to say about the dawning of conscious life in the animal world. Reflex action is unaccompanied by consciousness. The nervous actions which regulate the movements of the viscera go on without our knowledge; we learn of their existence only by study, as we learn of facts in outward nature. If you tickle the foot of a person asleep, and the foot is withdrawn by simple reflex action, the sleeper is unconscious alike of the irritation and of the movement, even as the decapitated frog is unconscious when a drop of nitric acid falls on his back and he lifts up a leg and rubs the place. In like manner the reflex movements which make up the life of the lowest animals are doubtless quite unconscious, even when in their general character they simulate conscious actions, as they often do. In the case of such creatures, the famous hypothesis of Descartes, that animals are automata, is doubtless mainly correct. In the case of instincts also, where the instinctive actions are completely organized before birth, and are repeated without variation during the whole lifetime of the individual, there is probably little if any consciousness. It is an essential prerequisite of consciousness that there should be a period of delay or tension between the receipt of an impression and the determination of the consequent movement. Diminish this period of delay and you diminish the vividness of consciousness. A familiar example will make this clear. When you are learning to play a new piece of music on the piano, especially if you do not read music rapidly, you are intensely conscious of each group of notes on the page, and of each group of keys that you strike, and of the relations of the one to the other. But when you have learned the piece by heart, you think nothing of either notes or keys, but play automatically while your attention is concentrated upon the artistic character of the music. If somebody thoughtlessly interrupts you with a question about Egyptian politics, you go on playing while you answer him politely. That is, where you had at first to make a conscious act of volition for each movement, the whole group of movements has now become automatic, and volition is only concerned in setting the process going. As the delay involved in the perception and the movement disappears, so does the consciousness of the perception and the movement tend to disappear. Consciousness implies perpetual discrimination, or the recognition of likenesses and differences, and this is impossible unless impressions persist long enough to be compared with one another. The physical organs in connection with whose activity consciousness is manifested are the upper and outer parts of the brain, — the cerebrum and cerebellum. These organs never receive impressions directly from the outside world, but only from lower nerve-centres, such as the spinal cord, the medulla, the optic lobes, and other special centres of sensation. The impressions received by the cerebrum and cerebellum are waves of molecular disturbance sent up along centripetal nerves from the lower centres, and presently drafted off along centrifugal nerves back to the lower centres, thus causing the myriad movements which make up our active life. Now there is no consciousness except when molecular disturbance is generated in the cerebrum and cerebellum faster than it can be drafted off to the lower centres.[1] It is the surplus of molecular disturbance remaining in the cerebrum and cerebellum, and reflected back and forth among the cells and fibres of which these highest centres are composed, that affords the physical condition for the manifestation of consciousness. Memory, emotion, reason, and volition begin with this retention of a surplus of molecular motion in the highest centres. As we survey the vertebrate sub-kingdom of animals, we find that as this surplus increases, the surface of the highest centres increases in area. In the lowest vertebrate animal, the amphioxus, the cerebrum and cerebellum do not exist at all. In fishes we begin to find them, but they are much smaller than the optic lobes. In such a highly organized fish as the halibut, which weighs about as much as an average-sized man, the cerebrum is smaller than a melon seed. Continuing to grow by adding concentric layers at the surface, the cerebrum and cerebellum become much larger in birds and lower mammals, gradually covering up the optic lobes. As we pass to higher mammalian forms, the growth of the cerebrum becomes most conspicuous, until it extends backwards so far as to cover up the cerebellum, whose functions are limited to the conscious adjustment of muscular movements. In the higher apes the cerebrum begins to extend itself forwards, and this goes on in the human race. The cranial capacity of the European exceeds that of the Australian by forty cubic inches, or nearly four times as much as that by which the Australian exceeds the gorilla; and the expansion is almost entirely in the upper and anterior portions. But the increase of the cerebral surface is shown not only in the general size of the organ, but to a still greater extent in the irregular creasing and furrowing of the surface. This creasing and furrowing begins to occur in the higher mammals, and in civilized man it is carried to an astonishing extent. The amount of intelligence is correlated with the number, the depth, and the irregularity of the furrows. A cat's brain has a few symmetrical creases. In an ape the creases are deepened into slight furrows, and they run irregularly, somewhat like the lines in the palm of your hand. With age and experience the furrows grow deeper and more sinuous, and new ones appear; and in man these phenomena come to have great significance. The cerebral surface of a human infant is like that of an ape. In an adult savage, or in a European peasant, the furrowing is somewhat marked and complicated. In the brain of a great scholar, the furrows are very deep and crooked, and hundreds of creases appear which are not found at all in the brains of ordinary men. In other words, the cerebral surface of such a man, the seat of conscious mental life, has become enormously enlarged in area; and we must further observe that it goes on enlarging in some cases into extreme old age.[1]

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[1] *The Unseen World, and other Essays*, i.; *Darwinism, and other Essays*, v.; *Excursions of an Evolutionist*, x., xiii.

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[1] *Outlines of Cosmic Philosophy*, part ii. ch. xvi.

Putting all these facts together, it becomes plain that in the lowest animals, whose lives consist of sundry reflex actions monotonously repeated from generation to generation, there can be nothing, or next to nothing, of what we know as consciousness. It is only when the life becomes more complicated and various, so that reflex action can no longer determine all its movements and the higher nerve centres begin to be evolved, that the dawning of consciousness is reached. But with the growth of the higher centres the capacities of action become so various and indeterminate that definite direction is not given to them until after birth. The creature begins life as an infant, with its partially developed cerebrum representing capabilities which it is left for its individual experience to bring forth and modify.

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[1] *Outlines of Cosmic Philosophy*, part ii. ch. xvi.

VI

LENGTHENING OF INFANCY, AND CONCOMITANT INCREASE OF BRAIN-SURFACE

THE first appearance of infancy in the animal world thus heralded the new era which was to be crowned by the development of Man. With the beginnings of infancy there came the first dawning of a conscious life similar in nature to the conscious life of human beings, and there came, moreover, on the part of parents, the beginning of feelings and actions not purely self-regarding. But still more, the period of infancy was a period of plasticity. The career of each individual being no longer wholly predetermined by the careers of its ancestors, it began to become teachable. Individuality of character also became possible at the same time, and for the same reason. All birds and mammals which take care of their young are teachable, though in very various degrees, and all in like manner show individual peculiarities of disposition, though in most cases these are slight and inconspicuous. In dogs, horses, and apes there is marked teachableness, and there are also marked differences in individual character.

But in the non-human animal world all these phenomena are but slightly developed. They are but the dim adumbrations of what was by and by to bloom forth in the human race. They can scarcely be said to have served as a prophecy of the revolution that was to come. One generation of dumb beasts is after all very like another, and from studying the careers of the mastodon, the hipparion, the sabre-toothed lion, or even the dryopithecus, an observer in the Miocene age could never have foreseen the possibility of a creature endowed with such a boundless capacity of progress as the modern Man. Nevertheless, however dimly suggestive was this group of phenomena, it contained the germ of all that is preëminent in humanity. In the direct line of our ancestry it only needed that the period of infancy should be sufficiently prolonged, in order that a creature should at length appear, endowed with the teachableness, the individuality, and the capacity for progress which are the peculiar prerogatives of fully developed Man.[1] In this direct line the manlike apes of Africa and the Indian Archipelago have advanced far beyond the mammalian world in general. Along with a cerebral surface, and an accompanying intelligence, far greater than that of other mammals, these tailless apes begin life as helpless babies, and are unable to walk, to feed themselves, or to grasp objects with precision until they are two or three months old. These apes have thus advanced a little way upon the peculiar road which our half-human forefathers began to travel as soon as psychical variations came to be of more use to the species than variations in bodily structure. The gulf by which the lowest known man is separated from the highest known ape consists in the great increase of his cerebral surface, with the accompanying intelligence, and in the very long duration of his infancy. These two things have gone hand in hand. The increase of cerebral surface, due to the working of natural selection in this direction alone, has entailed a vast increase in the amount of cerebral organization that must be left to be completed after birth, and thus has prolonged the period of infancy. And conversely the prolonging of the plastic period of infancy, entailing a vast increase in teachableness and versatility, has contributed to the further enlargement of the cerebral surface. The mutual reaction of these two groups of facts must have gone on for an enormous length of time since man began thus diverging from his simian brethren. It is not likely that less than a million years have elapsed since the first page of this new chapter in the history of creation was opened: it is probable that the time has been much longer. In comparison with such a period, the whole recorded duration of human history shrinks into nothingness. The pyramids of Egypt seem like things of yesterday when we think of the Cave-Men of western Europe in the glacial period, who scratched pictures of mammoths on pieces of reindeer antler with a bit of pointed flint. Yet during an entire geologic æon before these Cave-Men appeared on the scene, "a being erect upon two legs," if we may quote from Serjeant Buzfuz, "and wearing the outward semblance of a man and not of a monster," wandered hither and thither over the face of the earth, setting his mark upon it as no other creature yet had done, leaving behind him innumerable telltale remnants of his fierce and squalid existence, yet too scantily endowed with wit to make any written disclosure of his thoughts and deeds. If the physiological annals of that long and weary time could now be unrolled before us, the principal fact which we should discern, dominating all other facts in interest and significance, would be that mutual reaction between increase of cerebral surface and lengthening of babyhood which I have here described.

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[1] *Darwinism, and other Essays*, iii.; *Excursions of an Evolutionist*, xii.

Thus through the simple continuance and interaction of processes that began far back in the world of warm-blooded animals, we get at last a creature essentially different from all others. Through the complication of effects the heaping up of minute differences in degree has ended in bringing forth a difference in kind. In the human organism physical variation has well-nigh stopped, or is confined to insignificant features, save in the gray surface of the cerebrum. The work of cerebral organization is chiefly completed after birth, as we see by contrasting the smooth apelike brain-surface of the new-born child with the deeply-furrowed and myriad-seamed surface of the adult civilized brain. The plastic period of adolescence, lengthened in civilized man until it has come to cover more than one third of his lifetime, is thus the guaranty of his boundless progressiveness. Inherited tendencies and aptitudes still form the foundations of character ; but individual experience has come to count as an enormous factor in modifying the career of mankind from generation to generation. It is not too much to say that the difference between man and all other living creatures, in respect of teachableness, progressiveness, and individuality of character, surpasses all other differences of kind that are known to exist in the universe.

VII

CHANGE IN THE DIRECTION OF THE WORKING OF NATURAL SELECTION

IN the fresh light which these considerations throw upon the problem of man's origin, we can now see more clearly than ever how great a revolution was inaugurated when natural selection began to confine its operations to the surface of the cerebrum. Among the older incidents in the evolution of organic life, the changes were very wonderful which out of the pectoral fin of a fish developed the jointed fore-limb of the mammal with its five-toed paw, and thence through much slighter variation brought forth the human arm with its delicate and crafty hand. More wondrous still were the phases of change through which the rudimentary pigment-spot of the worm, by the development and differentiation of successive layers, gave place to the variously-constructed eyes of insects, mollusks, and vertebrates. The day for creative work of this sort has probably gone by, as the day for the evolution of annulose segments and vertebrate skeletons has gone by,

— on our planet, at least. In the line of our own development, all work of this kind stopped long ago, to be replaced by different methods. As an optical instrument, the eye had well-nigh reached extreme perfection in many a bird and mammal ages before man's beginnings; and the essential features of the human hand existed already in the hands of Miocene apes. But different methods came in when human intelligence appeared upon the scene. Mr. Spencer has somewhere reminded us that the crowbar is but an extra lever added to the levers of which the arm is already composed, and the telescope but adds a new set of lenses to those which already exist in the eye. This beautiful illustration goes to the kernel of the change that was wrought when natural selection began to confine itself to the psychical modification of our ancestors. In a very deep sense all human science is but the increment of the power of the eye, and all human art is the increment of the power of the hand.[1] Vision and manipulation, — these, in their countless indirect and transfigured forms, are the two coöperating factors in all intellectual progress. It is not merely that with the telescope we see extinct volcanoes on the moon, or resolve spots of nebulous cloud into clusters of blazing suns; it is that in every scientific theory we frame by indirect methods visual images of things not present to sense. With our mind's eye we see atmospheric convulsions on the surfaces of distant worlds, watch the giant ichthyosaurs splashing in Jurassic oceans, follow the varied figures of the rhythmic dance of molecules as chemical elements unite and separate, or examine, with the aid of long-forgotten vocabularies now magically restored, the manners and morals, the laws and superstitions, of peoples that have ceased to be.[1] And so in art the wonderful printing-press, and the engine that moves it, are the lineal descendants through countless stages of complication, of the simple levers of primitive man and the rude stylus wherewith he engraved strange hieroglyphs on the bark of trees. In such ways, since the human phase of evolution began, has the direct action of muscle and sense been supplemented and superseded by the indirect work of the inquisitive and inventive mind.

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[1] *Outlines of Cosmic Philosophy*, part ii. ch. xxi.

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[1] *Excursions of an Evolutionist*, iv.

VIII

GROWING PREDOMINANCE OF THE PSYCHICAL LIFE

LET us note one further aspect of this mighty revolution. In its lowly beginnings the psychical life was merely an appendage to the life of the body. The avoidance of enemies, the securing of food, the perpetuation of the species, make up the whole of the lives of lower animals, and the rudiments of memory, reason, emotion, and volition were at first concerned solely with the achievement of these ends in an increasingly indirect, complex, and effective way. Though the life of a large portion of the human race is still confined to the pursuit of these same ends, yet so vast has been the increase of psychical life that the simple character of the ends is liable to be lost sight of amid the variety, the indirectness, and the complexity of the means. But in civilized society other ends, purely immaterial in their nature, have come to add themselves to these, and in some instances to take their place. It is long since we were told that Man does not live by bread alone. During many generations we have seen thousands of men, actuated by the noblest impulse of which humanity is capable, though misled by the teachings of a crude philosophy, despising and maltreating their bodies as clogs and incumbrances to the life of the indwelling soul. Countless martyrs we have seen throwing away the physical earthly life as so much worthless dross, and all for the sake of purely spiritual truths. As with religion, so with the scientific spirit and the artistic spirit,—the unquenchable craving to know the secrets of nature, and the yearning to create the beautiful in form and colour and sound. In the highest human beings such ends as these have come to be uppermost in consciousness, and with the progress of material civilization this will be more and more the case. If we can imagine a future time when warfare and crime shall have been done away with forever, when disease shall have been for the most part curbed, and when every human being by moderate labour can secure ample food and shelter, we can also see that in such a state of things the work of civilization would be by no means completed. In ministering to human happiness in countless ways, through the pursuit of purely spiritual ends, in enriching and diversifying life to the utmost, there would still be almost limitless work to be done. I believe that such a time will come for weary and suffering mankind. Such a faith is inspiring. It sustains one in the work of life, when one would otherwise lose heart. But it is a faith that rests upon induction. The process of evolution is excessively slow, and its ends are achieved at the cost of enormous waste of life, but for innumerable ages its direction has been toward the goal here pointed out; and the case may be fitly summed up in the statement that whereas in its rude beginnings the psychical life was but an appendage to the body, in fully-developed Humanity the body is but the vehicle for the soul.

IX

THE ORIGINS OF SOCIETY AND OF MORALITY

ONE further point must be considered before this outline sketch of the manner of man's origin can be called complete. The psychical development of Humanity, since its earlier stages, has been largely due to the reaction of individuals upon one another in those various relations which we characterize as social.[1] In considering the origin of Man, the origin of human society cannot be passed over. Foreshadowings of social relations occur in the animal world, not only in the line of our own vertebrate ancestry, but in certain orders of insects which stand quite remote from that line. Many of the higher mammals are gregarious, and this is especially true of that whole order of primates to which we belong. Rudimentary moral sentiments are also clearly discernible in the highest members of various mammalian orders, and in all but the lowest members of our own order. But in respect of definiteness and permanence the relations between individuals in a state of gregariousness fall far short of the relations between individuals in the rudest human society. The primordial unit of human society is the family, and it was by the establishment of definite and permanent family relationships that the step was taken which raised Man socially above the level of gregarious apehood. This great point was attained through that lengthening of the period of helpless childhood which accompanied the gradually increasing intelligence of our half-human ancestors. When childhood had come to extend over a period of ten or a dozen years — a period which would be doubled, or more than doubled, where several children were born in succession to the same parents — the relationships between father and mother, brethren and sisters, must have become firmly knit; and thus the family, the unit of human society, gradually came into existence.[1] The rudimentary growth of moral sentiment must now have received a definite direction. As already observed, with the beginnings of infancy in the animal world there came the genesis in the parents of feelings and actions not purely self-regarding. Rudimentary sympathies, with rudimentary capacity for self-devotion, are witnessed now and then among higher mammals, such as the dog, and not uncommonly among apes. But as the human family, with its definite relationships, came into being, there must necessarily have grown up between its various members reciprocal necessities of behaviour. The conduct of the individual could no longer be shaped with sole reference to his own selfish desires, but must be to a great extent subordinated to the general welfare of the family. And in judging of the character of his own conduct, the individual must now begin to refer it to some law of things outside of himself; and hence the germs of conscience and of the idea of duty. Such were no doubt the crude beginnings of human morality.

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[1] *Outlines of Cosmic Philosophy*, part ii. ch. xxi.

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[1] *Outlines of Cosmic Philosophy*, part ii. ch. xxii.

With this genesis of the family, the Creation of Man may be said, in a certain sense, to have been completed. The great extent of cerebral surface, the lengthened period of infancy, the consequent capacity for progress, the definite constitution of the family, and the judgment of actions as good or bad according to some other standard than that of selfish desire, — these are the attributes which essentially distinguish Man from other creatures. All these, we see, are direct or indirect results of the revolution which began when natural selection came to confine itself to psychical variations, to the neglect of physical variations. The immediate result was the increase of cerebrum. This prolonged the infancy, thus giving rise to the capacity for progress; and infancy, in turn, originated the family and thus opened the way for the growth of sympathies and of ethical feelings. All these results have perpetually reacted upon one another until a creature different in kind from all other creatures has been evolved. The creature thus evolved long since became dominant over the earth in a sense in which none of his predecessors ever became dominant; and henceforth the work of evolution, so far as our planet is concerned, is chiefly devoted to the perfecting of this last and most wonderful product of creative energy.

X

IMPROVABLENESS OF MAN

FOR the creation of Man was by no means the creation of a perfect being. The most essential feature of Man is his improvableness, and since his first appearance on the earth the changes that have gone on in him have been enormous, though they have continued to run along in the lines of development that were then marked out. The changes have been so great that in many respects the interval between the highest and the lowest men far surpasses quantitatively the interval between the lowest men and the highest apes. If we take into account the creasing of the cerebral surface, the difference between the brain of a Shakespeare and that of an Australian savage would doubtless be fifty times greater than the difference between the Australian's brain and that of an orang-outang. In mathematical capacity the Australian, who cannot tell the number of fingers on his two hands, is much nearer to a lion or wolf than to Sir Rowan Hamilton, who invented the method of quaternions. In moral development this same Australian, whose language contains no words for justice and benevolence, is less remote from dogs and baboons than from a Howard or a Garrison. In progressiveness, too, the difference between the lowest and the highest races of men is no less conspicuous. The Australian is more teachable than the ape, but his limit is nevertheless very quickly reached. All the distinctive attributes of Man, in short, have been developed to an enormous extent through long ages of social evolution.

This psychical development of Man is destined to go on in the future as it has gone on in the past. The creative energy which has been at work through the bygone eternity is not going to become quiescent to-morrow. We have learned something of its methods of working, and from the careful observation of the past we can foresee the future in some of its most general outlines. From what has already gone on during the historic period of man's existence, we can safely predict a change that will by and by distinguish him from all other creatures even more widely and more fundamentally than he is distinguished to-day. Whenever in the course of organic evolution we see any function beginning as incidental to the performance of other functions, and continuing for many ages to increase in importance until it becomes an indispensable strand in the web of life, we may be sure that by a continuance of the same process its influence is destined to increase still more in the future. Such has been the case with the function of sympathy, and with the ethical feelings which have grown up along with sympathy and depend largely upon it for their vitality. Like everything else which especially distinguishes Man, the altruistic feelings were first called into existence through the first beginnings of infancy in the animal world. Their rudimentary form was that of the transient affection of a female bird or mammal for its young. First given a definite direction through the genesis of the primitive human family, the development of altruism has formed an important part of the progress of civilization, but as yet it has scarcely kept pace with the general development of intelligence. There can be little doubt that in respect of justice and kindness the advance of civilized man has been less marked than in respect of quick-wittedness. Now this is because the advancement of civilized man has been largely effected through fighting, through the continuance of that deadly struggle and competition which has been going on ever since organic life first appeared on the earth. It is through such fierce and perpetual struggle that the higher forms of life have been gradually evolved by natural selection. But we have already seen how in many respects the evolution of Man was the opening of an entirely new chapter in the history of the universe. In no respect was it more so than in the genesis of the altruistic emotions. For when natural selection, through the lengthening of childhood, had secured a determinate development for this class of human feelings, it had at last originated a power which could thrive only through the elimination of strife. And the later history of mankind, during the past thirty centuries, has been characterized by the gradual eliminating of strife, though the process has gone on with the extreme slowness that marks all the work of evolution. It is only at the present day that, by surveying human history from the widest possible outlook, and with the aid of the habits of thought which the study of evolution fosters, we are enabled distinctly to observe this tendency. As this is the most wonderful of all the phases of that stupendous revolution in nature which was inaugurated in the Creation of Man, it deserves especial attention here; and we shall find it leading us quite directly to our conclusion. From the Origin of Man, when thoroughly comprehended in its general outlines, we shall at length be able to catch some glimpses of his Destiny.

XI

UNIVERSAL WARFARE OF PRIMEVAL MEN

IN speaking of the higher altruistic feelings as being antagonistic to the continuance of warfare, I did not mean to imply that warfare can ever be directly put down by our horror of cruelty or our moral disapproval of strife. The actual process is much more indirect and complex than this. In respect of belligerency the earliest men were doubtless no better than brutes. They were simply the most crafty and formidable among brutes. To get food was the prime necessity of life, and as long as food was obtainable only by hunting and fishing, or otherwise seizing upon edible objects already in existence, chronic and universal quarrel was inevitable. The conditions of the struggle for existence were not yet visibly changed from what they had been from the outset in the animal world. That struggle meant everlasting slaughter, and the fiercest races of fighters would be just the ones to survive and perpetuate their kind. Those most successful primitive men, from whom civilized peoples are descended, must have excelled in treachery and cruelty, as in quickness of wit and strength of will. That moral sense which makes it seem wicked to steal and murder was scarcely more developed in them than in tigers or wolves. But to all this there was one exception. The family supplied motives for peaceful coöperation.[1] Within the family limits fidelity and forbearance had their uses, for events could not have been long in showing that the most coherent families would prevail over their less coherent rivals. Observation of the most savage races agrees with the comparative study of the institutions of civilized peoples, in proving that the only bond of political union recognized among primitive men, or conceivable by them, was the physical fact of blood-relationship. Illustrations of this are found in plenty far within the historic period. The very township, which under one name or another has formed the unit of political society among all civilized peoples, was originally the stockaded dwelling-place of a clan which traced its blood to a common ancestor. In such a condition of things the nearest approach ever made to peace was a state of armed truce; and while the simple rules of morality were recognized, they were only regarded as binding within the limits of the clan. There was no recognition of the wickedness of robbery and murder in general.

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[1] *Outlines of Cosmic Philosophy*, part ii. ch. xviii.

This state of things, as above hinted, could not come to an end as long as men obtained food by seizing upon edible objects already in existence. The supply of fish, game, or fruit being strictly limited, men must ordinarily fight under penalty of starvation. If we could put a moral interpretation upon events which antedated morality as we understand it, we should say it was their duty to fight; and the reverence accorded to the chieftain who murdered most successfully in behalf of his clansmen was well deserved. It is worthy of note that, in isolated parts of the earth where the natural supply of food is abundant, as in sundry tropical islands of the Pacific Ocean, men have ceased from warfare and become gentle and docile without rising above the intellectual level of savagery. Compared with other savages, they are like the chimpanzee as contrasted with the gorilla. Such exceptional instances well illustrate the general truth that, so long as the method of obtaining food was the same as that employed by brute animals, men must continue to fight like dogs over a bone.

XII

FIRST CHECKED BY THE BEGINNINGS OF INDUSTRIAL CIVILIZATION

BUT presently man's superior intelligence came into play in such wise that other and better methods of getting food were devised. When in intervals of peace men learned to rear flocks and herds, and to till the ground, and when they had further learned to exchange with one another the products of their labour, a new step, of most profound significance, was taken. Tribes which had once learned how to do these things were not long in overcoming their neighbours, and flourishing at their expense, for agriculture allows a vastly greater population to live upon a given area, and in many ways it favours social compactness. An immense series of social changes was now begun. Whereas the only conceivable bond of political combination had heretofore been blood-relationship, a new basis was now furnished by territorial contiguity and by community of occupation. The supply of food was no longer strictly limited, for it could be indefinitely increased by peaceful industry; and moreover, in the free exchange of the products of labour, it ceased to be true that one man's interest was opposed to another's. Men did not at once recognize this fact, and indeed it has not yet become universally recognized, so long have men persisted in interpreting the conditions of industrial life in accordance with the immemorial traditions of the time when the means of subsistence were strictly limited, so that one man's success meant another's starvation. Our robber tariffs — miscalled "protective" — are survivals of the barbarous mode of thinking which fitted the ages before industrial civilization began. But although the pacific implications of free exchange were very slowly recognized, it is not the less true that the beginnings of agriculture and commerce marked the beginnings of the greatest social revolution in the whole career of mankind. Henceforth the conditions for the maintenance of physical life became different from what they had been throughout the past history of the animal world. It was no longer necessary for men to quarrel for their food like dogs over a bone; for they could now obtain it far more effectively by applying their intelligence to the task of utilizing the forces of inanimate nature; and the due execution of such a task was in no wise assisted by wrath and contention, but from the outset was rather hindered by such things.

Such were the beginnings of industrial civilization. Out of its exigencies, continually increasing in complexity, have proceeded, directly or indirectly, the arts and sciences which have given to modern life so much of its interest and value. But more important still has been the work of industrial civilization in the ethical field. By furnishing a wider basis for political union than mere blood-relationship, it greatly extended the area within which moral obligations were recognized as binding. At first confined to the clan, the idea of duty came at length to extend throughout a state in which many clans were combined and fused, and as it thus increased in generality and abstractness, the idea became immeasurably strengthened and ennobled. At last, with the rise of empires, in which many states were brought together in pacific industrial relations, the recognized sphere of moral obligation became enlarged until it comprehended all mankind.

XIII

METHODS OF POLITICAL DEVELOPMENT, AND ELIMINATION OF WARFARE

THIS rise of empires, this coalescence of small groups of men into larger and larger political aggregates, has been the chief work of civilization, when looked at on its political side.[1] Like all the work of evolution, this process has gone on irregularly and intermittently, and its ultimate tendency has only gradually become apparent. This process of coalescence has from the outset been brought about by the needs of industrial civilization, and the chief obstacle which it has had to encounter has been the universal hostility and warfare bequeathed from primeval times. The history of mankind has been largely made up of fighting, but in the careers of the most progressive races this fighting has been far from meaningless, like the battles of kites and crows. In the stream of history which, beginning on the shores of the Mediterranean Sea, has widened until in our day it covers both sides of the Atlantic and

[1] *Outlines of Cosmic Philosophy*, part ii. ch. xviii.

is fast extending over the remotest parts of the earth,—in this main stream of history the warfare which has gone on has had a clearly discernible purpose and meaning. Broadly considered, this warfare has been chiefly the struggle of the higher industrial civilization in defending itself against the attacks of neighbours who had not advanced beyond that early stage of humanity in which warfare was chronic and normal. During the historic period, the wars of Europe have been either contests between the industrial and the predatory types of society, or contests incident upon the imperfect formation of large political aggregates. There have been three ways in which great political bodies have arisen. The earliest and lowest method was that of *conquest without incorporation.* A single powerful tribe conquered and annexed its neighbours without admitting them to a share in the government. It appropriated their military strength, robbed them of most of the fruits of their labour, and thus virtually enslaved them. Such was the origin of the great despotic empires of Oriental type. Such states degenerate rapidly in military strength. Their slavish populations, accustomed to be starved and beaten or massacred by the tax-gatherer, become unable to fight, so that great armies of them will flee before a handful of freemen, as in the case of the ancient Persians and the modern Egyptians.

To strike down the executive head of such an assemblage of enslaved tribes is to effect the conquest or the dissolution of the whole mass, and hence the history of Eastern peoples has been characterized by sudden and gigantic revolutions.

The second method of forming great political bodies was that of *conquest with incorporation.* The conquering tribe, while annexing its neighbours, gradually admitted them to a share in the government. In this way arose the Roman empire, the largest, the most stable, and in its best days the most pacific political aggregate the world had as yet seen. Throughout the best part of Europe, its conquests succeeded in transforming the ancient predatory type of society into the modern industrial type. It effectually broke up the primeval clan-system, with its narrow ethical ideas, and arrived at the broad conception of rights and duties coextensive with Humanity. But in the method upon which Rome proceeded there was an essential element of weakness. The simple device of representation, by which political power is equally retained in all parts of the community while its exercise is delegated to a central body, was entirely unknown to the Romans. Partly for this reason, and partly because of the terrible military pressure to which the frontier was perpetually exposed, the Roman government became a despotism which gradually took on many of the vices of the Oriental type. The political weakness which resulted from this allowed Europe to be overrun by peoples organized in clans and tribes, and for some time there was a partial retrogression toward the disorder characteristic of primitive ages. The retrogression was but partial and temporary, however; the exposed frontier has been steadily pushed eastward into the heart of Asia; the industrial type of society is no longer menaced by the predatory type; the primeval clan-system has entirely disappeared as a social force; and warfare, once ubiquitous and chronic, has become local and occasional.

The third and highest method of forming great political bodies is that of *federation.* The element of fighting was essential in the two lower methods, but in this it is not essential. Here there is no conquest, but a voluntary union of small political groups into a great political group. Each little group preserves its local independence intact, while forming part of an indissoluble whole. Obviously this method of political union requires both high intelligence and high ethical development. In early times it was impracticable. It was first attempted, with brilliant though ephemeral success, by the Greeks, but it failed for want of the device of representation. In later times it was put into operation, with permanent success, on a small scale by the Swiss, and on a great scale by our forefathers in England. The coalescence of shires into the kingdom of England, effected as it was by means of a representative assembly, and accompanied by the general retention of local self-government, afforded a distinct precedent for such a gigantic federal union as men of English race have since constructed in America. The principle of federation was there, though not the name. And here we hit upon the fundamental contrast between the history of England and that of France. The method by which the modern French nation has been built up has been the Roman method of conquest with incorporation. As the ruler of Paris gradually overcame his vassals, one after another, by warfare or diplomacy, he annexed their counties to his royal domain, and governed them by lieutenants sent from Paris. Self-government was thus crushed out in France, while it was preserved in England. And just as Rome achieved its unprecedented dominion by adopting a political method more effective than any that had been hitherto employed, so England, employing for the first time a still higher and more effective method, has come to play a part in the world compared with which even the part played by Rome seems insignificant. The test of the relative strength of the English and

Roman methods came when England and France contended for the possession of North America. The people which preserved its self-government could send forth self-supporting colonies; the people which had lost the very tradition of self-government could not. Hence the dominion of the sea, with that of all the outlying parts of the earth, fell into the hands of men of English race; and hence the federative method of political union — the method which contains every element of permanence, and which is pacific in its very conception — is already assuming a sway which is unquestionably destined to become universal.

Bearing all this in mind, we cannot fail to recognize the truth of the statement that the great wars of the historic period have been either contests between the industrial and the predatory types of society or contests incident upon the imperfect formation of great political aggregates. Throughout the turmoil of the historic period — which on a superficial view seems such a chaos — we see certain definite tendencies at work; the tendency toward the formation of larger and larger political aggregates, and toward the more perfect maintenance of local self-government and individual freedom among the parts of the aggregate. This two-sided process began with the beginnings of industrial civilization; it has aided the progress of industry and been aided by it; and the result has been to diminish the quantity of warfare, and to lessen the number of points at which it touches the ordinary course of civilized life. With the further continuance of this process, but one ultimate result is possible. It must go on until warfare becomes obsolete. The nineteenth century, which has witnessed an unprecedented development of industrial civilization, with its attendant arts and sciences, has also witnessed an unprecedented diminution in the strength of the primeval spirit of militancy. It is not that we have got rid of great wars, but that the relative proportion of human strength which has been employed in warfare has been remarkably less than in any previous age. In our own history, of the two really great wars which have permeated our whole social existence, — the Revolutionary War and the War of Secession, — the first was fought in behalf of the pacific principle of equal representation; the second was fought in behalf of the pacific principle of federalism. In each case, the victory helped to hasten the day when warfare shall become unnecessary. In the few great wars of Europe since the overthrow of Napoleon, we may see the same principle at work. In almost every case the result has been to strengthen the pacific tendencies of modern society. Whereas warfare was once dominant over the face of the earth, and came home in all its horrid details to everybody's door, and threatened the very existence of industrial civilization; it has now become narrowly confined in time and space, it no longer comes home to everybody's door, and, in so far as it is still tolerated, for want of a better method of settling grave international questions, it has become quite ancillary to the paramount needs of industrial civilization. When we can see so much as this lying before us on the pages of history, we cannot fail to see that the final extinction of warfare is only a question of time. Sooner or later it must come to an end, and the pacific principle of federalism, whereby questions between states are settled, like questions between individuals, by due process of law, must reign supreme over all the earth.

XIV

END OF THE WORKING OF NATURAL SELECTION UPON MAN. THROWING OFF THE BRUTE-INHERITANCE

AS regards the significance of Man's position in the universe, this gradual elimination of strife is a fact of utterly unparalleled grandeur. Words cannot do justice to such a fact. It means that the wholesale destruction of life, which has heretofore characterized evolution ever since life began, and through which the higher forms of organic existence have been produced, must presently come to an end in the case of the chief of God's creatures. It means that the universal struggle for existence, having succeeded in bringing forth that consummate product of creative energy, the Human Soul, has done its work and will presently cease. In the lower regions of organic life it must go on, but as a determining factor in the highest work of evolution it will disappear.

The action of natural selection upon Man has long since been essentially diminished through the operation of social conditions. For in all grades of civilization above the lowest, "there are so many kinds of superiorities which severally enable men to survive, notwithstanding accompanying inferiorities, that natural selection cannot by itself rectify any particular unfitness." In a race of inferior animals any maladjustment is quickly removed by natural selection, because, owing to the universal slaughter, the highest completeness of life possible to a given grade of organization is required for the mere maintenance of life. But under the conditions surrounding human development it is otherwise.[1] There is a wide interval between the highest and lowest degrees of completeness of living that are compatible with maintenance of life. Hence the wicked flourish. Vice is but slowly eliminated, because mankind has so many other qualities, beside the bad ones, which enable it to subsist and achieve progress in spite of them, that natural selection — which always works through death — cannot come into play. The improvement of civilized man goes on mainly through processes of direct adaptation. The principle in accordance with which the gloved hand of the dandy becomes white and soft while the hand of the labouring man grows brown and tough is the main principle at work in the improvement of Humanity.

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[1] *Outlines of Cosmic Philosophy*, part ii. ch. xxii.

Our intellectual faculties, our passions and prejudices, our tastes and habits, become strengthened by use and weakened by disuse, just as the blacksmith's arm grows strong and the horse turned out to pasture becomes unfit for work. This law of use and disuse has been of immense importance throughout the whole evolution of organic life. With Man it has come to be paramount.

If now we contrast the civilized man intellectually and morally with the savage, we find that, along with his vast increase of cerebral surface, he has an immensely greater power of representing in imagination objects and relations not present to the senses. This is the fundamental intellectual difference between civilized men and savages.[1] The power of imagination, or ideal representation, underlies the whole of science and art, and it is closely connected with the ability to work hard and submit to present discomfort for the sake of a distant reward. It is also closely connected with the development of the sympathetic feelings. The better we can imagine objects and relations not present to sense, the more readily we can sympathize with other people. Half the cruelty in the world is the direct result of stupid incapacity to put one's self in the other man's place. So closely interrelated are our intellectual and moral natures that the development of sympathy is very considerably determined by increasing width and variety of experience. From the simplest form of sympathy, such as the painful thrill felt on seeing some one in a dangerous position, up to the elaborate complication of altruistic feelings involved in the notion of abstract justice, the development is very largely a development of the representative faculty. The very same causes, therefore, deeply grounded in the nature of industrial civilization, which have developed science and art, have also had a distinct tendency to encourage the growth of the sympathetic emotions.

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[1] *Outlines of Cosmic Philosophy*, part ii. ch. xxi.

But, as already observed, these emotions are still too feebly developed, even in the highest races of men. We have made more progress in intelligence than in kindness. For thousands of generations, and until very recent times, one of the chief occupations of men has been to plunder, bruise, and kill one another. The selfish and ugly passions which are primordial — which have the incalculable strength of inheritance from the time when animal consciousness began — have had but little opportunity to grow weak from disuse. The tender and unselfish feelings, which are a later product of evolution, have too seldom been allowed to grow strong from exercise. And the whims and prejudices of the primeval militant barbarism are slow in dying out from the midst of peaceful industrial civilization. The coarser forms of cruelty are disappearing, and the butchery of men has greatly diminished. But most people apply to industrial pursuits a notion of antagonism derived from ages of warfare, and seek in all manner of ways to cheat or overreach one another. And as in more barbarous times the hero was he who had slain his tens of thousands, so now the man who has made wealth by overreaching his neighbours is not uncommonly spoken of in terms which imply approval. Though gentlemen, moreover, no longer assail one another with knives and clubs, they still inflict wounds with cruel words and sneers. Though the free-thinker is no longer chained to a stake and burned, people still tell lies about him, and do their best to starve him by hurting his reputation. The virtues of forbearance and self-control are still in a very rudimentary state, and of mutual helpfulness there is far too little among men.

Nevertheless in all these respects some improvement has been made, along with the diminution of warfare, and by the time warfare has not merely ceased from the earth but has come to be the dimly remembered phantom of a remote past, the development of the sympathetic side of human nature will doubtless become prodigious. The manifestation of selfish and hateful feelings will be more and more sternly repressed by public opinion, and such feelings will become weakened by disuse, while the sympathetic feelings will increase in strength as the sphere for their exercise is enlarged. And thus at length we see what human progress means. It means throwing off the brute-inheritance, — gradually throwing it off through ages of struggle that are by and by to make struggle needless. Man is slowly passing from a primitive social state in which he was little better than a brute, toward an ultimate social state in which his character shall have become so transformed that nothing of the brute can be detected in it. The ape and the tiger in human nature will become extinct. Theology has had much to say about original sin. This original sin is neither more nor less than the brute-inheritance which every man carries with him, and the process of evolution is an advance toward true salvation. Fresh value is thus added to human life. The modern prophet, employing the methods of science, may again proclaim that the kingdom of heaven is at hand. Work ye, therefore, early and late, to prepare its coming.

XV

THE MESSAGE OF CHRISTIANITY

NOW what is this message of the modern prophet but pure Christianity? — not the mass of theological doctrine ingeniously piled up by Justin Martyr and Tertullian and Clement and Athanasius and Augustine, but the real and essential Christianity which came, fraught with good tidings to men, from the very lips of Jesus and Paul! When did St. Paul's conception of the two men within him that warred against each other, the appetites of our brute nature and the God-given yearning for a higher life, — when did this grand conception ever have so much significance as now? When have we ever before held such a clue to the meaning of Christ in the Sermon on the Mount? "Blessed are the meek, for they shall inherit the earth." In the cruel strife of centuries has it not often seemed as if the earth were to be rather the prize of the hardest heart and the strongest fist? To many men these words of Christ have been as foolishness and as a stumbling-block, and the ethics of the Sermon on the Mount have been openly derided as too good for this world. In that wonderful picture of modern life which is the greatest work of one of the great seers of our time, Victor Hugo gives a concrete illustration of the working of Christ's methods. In the saintlike career of Bishop Myriel, and in the transformation which his example works in the character of the hardened outlaw Jean Valjean, we have a most powerful commentary on the Sermon on the Mount. By some critics who could express their views freely about " Les Misérables " while hesitating to impugn directly the authority of the New Testament, Monseigneur Bienvenu was unsparingly ridiculed as a man of impossible goodness, and as a milksop and fool withal. But I think Victor Hugo understood the capabilities of human nature, and its real dignity, much better than these scoffers. In a low stage of civilization Monseigneur Bienvenu would have had small chance of reaching middle life. Christ himself, we remember, was crucified between two thieves. It is none the less true that when once the degree of civilization is such as to allow this highest type of character, distinguished by its meekness and kindness, to take root and thrive, its methods are incomparable in their potency. The Master knew full well that the time was not yet ripe, — that he brought not peace, but a sword. But he preached nevertheless that gospel of great joy which is by and by to be realized by toiling Humanity, and he announced ethical principles fit for the time that is coming. The great originality of his teaching, and the feature that has chiefly given it power in the world, lay in the distinctness with which he conceived a state of society from which every vestige of strife, and the modes of behaviour adapted to ages of strife, shall be utterly and forever swept away. Through misery that has seemed unendurable and turmoil that has seemed endless, men have thought on that gracious life and its sublime ideal, and have taken comfort in the sweetly solemn message of peace on earth and good will to men.

I believe that the promise with which I started has now been amply redeemed. I believe it has been fully shown that so far from degrading Humanity, or putting it on a level with the animal world in general, the doctrine of evolution shows us distinctly for the first time how the creation and the perfecting of Man is the goal toward which Nature's work has been tending from the first. We can now see clearly that our new knowledge enlarges tenfold the significance of human life, and makes it seem more than ever the chief object of Divine care, the consummate fruition of that creative energy which is manifested throughout the knowable universe.

XVI

THE QUESTION AS TO A FUTURE LIFE

UPON the question whether Humanity is, after all, to cast in its lot with the grass that withers and the beasts that perish, the whole foregoing argument has a bearing that is by no means remote or far-fetched. It is not likely that we shall ever succeed in making the immortality of the soul a matter of scientific demonstration, for we lack the requisite data. It must ever remain an affair of religion rather than of science. In other words, it must remain one of that class of questions upon which I may not expect to convince my neighbour, while at the same time I may entertain a reasonable conviction of my own upon the subject.[1] In the domain of cerebral physiology the question might be debated forever without a result. The only thing which cerebral physiology tells us, when studied with the aid of molecular physics, is against the materialist, so far as it goes. It tells us that, during the present life, although thought and feeling are always manifested in connection with a peculiar form of matter, yet by no possibility can thought and feeling be in any sense the products of matter. Nothing could be more grossly unscientific than the famous remark of Cabanis, that the brain secretes thought as the liver secretes bile. It is not even correct to say that thought goes on in the brain. What goes on in the brain is an amazingly complex series of molecular movements, with which thought and feeling are in some unknown way correlated, not as effects or as causes, but as concomitants. So much is clear, but cerebral physiology says nothing about another life. Indeed, why should it? The last place in the world to which I should go for information about a state of things in which thought and feeling can exist in the absence of a cerebrum would be cerebral physiology!

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[1] *The Unseen World, and other Essays*, i.; *Excursions of an Evolutionist*, x.

The materialistic assumption that there is no such state of things, and that the life of the soul accordingly ends with the life of the body, is perhaps the most colossal instance of baseless assumption that is known to the history of philosophy. No evidence for it can be alleged beyond the familiar fact that during the present life we know Soul only in its association with Body, and therefore cannot discover disembodied soul without dying ourselves. This fact must always prevent us from obtaining direct evidence for the belief in the soul's survival. But a negative presumption is not created by the absence of proof in cases where, in the nature of things, proof is inaccessible.[1] With his illegitimate hypothesis of annihilation, the materialist transgresses the bounds of experience quite as widely as the poet who sings of the New Jerusalem with its river of life and its streets of gold. Scientifically speaking, there is not a particle of evidence for either view.

But when we desist from the futile attempt to introduce scientific demonstration into a region which confessedly transcends human experience, and when we consider the question upon broad grounds of moral probability, I have no doubt that men will continue in the future, as in the past, to cherish the faith in a life beyond the grave. In past times the disbelief in the soul's immortality has always accompanied that kind of philosophy which, under whatever name, has regarded Humanity as merely a local incident in an endless and aimless series of cosmical changes. As a general rule, people who have come to take such a view of the position of Man in the universe have ceased to believe in a future life. On the other hand, he who regards Man as the consummate fruition of creative energy, and the chief object of Divine care, is almost irresistibly driven to the belief that the soul's career is not completed with the present life upon the earth. Difficulties on theory he will naturally expect to meet in many quarters ; but these will not weaken his faith, especially when he remembers that upon the alternative view the difficulties are at least as great. We live in a world of mystery, at all events, and there is not a problem in the simplest and most exact departments of science which does not speedily lead us to a transcendental problem that we can neither solve nor elude. A broad commonsense argument has often to be called in, where keen-edged metaphysical analysis has confessed itself baffled.

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[1] *The Unseen World, and other Essays*, i.; *Darwinism, and other Essays*, v.

Now we have here seen that the doctrine of evolution does not allow us to take the atheistic view of the position of Man. It is true that modern astronomy shows us giant balls of vapour condensing into fiery suns, cooling down into planets fit for the support of life, and at last growing cold and rigid in death, like the moon. And there are indications of a time when systems of dead planets shall fall in upon their central ember that was once a sun, and the whole lifeless mass, thus regaining heat, shall expand into a nebulous cloud like that with which we started, that the work of condensation and evolution may begin over again. These Titanic events must doubtless seem to our limited vision like an endless and aimless series of cosmical changes. They disclose no signs of purpose, or even of dramatic tendency;[1] they seem like the weary work of Sisyphos. But on the face of our own planet, where alone we are able to survey the process of evolution in its higher and more complex details, we do find distinct indications of a dramatic tendency, though doubtless not of purpose in the limited human sense. The Darwinian theory, properly understood, replaces as much teleology[2] as it destroys. From the first dawning of life we see all things working together toward one mighty goal, the evolution of the most exalted spiritual qualities which characterize Humanity. The body is cast aside and returns to the dust of which it was made. The earth, so marvellously wrought to man's uses, will also be cast aside. The day is to come, no doubt, when the heavens shall vanish as a scroll, and the elements be melted with fervent heat. So small is the value which Nature sets upon the perishable forms of matter! The question, then, is reduced to this: Are Man's highest spiritual qualities, into the production of which all this creative energy has gone, to disappear with the rest? Has all this work been done for nothing? Is it all ephemeral, all a bubble that bursts, a vision that fades? Are we to regard the Creator's work as like that of a child, who builds houses out of blocks, just for the pleasure of knocking them down? For aught that science can tell us, it may be so, but I can see no good reason for believing any such thing. On such a view the riddle of the universe becomes a riddle without a meaning. Why, then, are we any more called upon to throw away our belief in the permanence of the spiritual element in Man than we are called upon to throw away our belief in the constancy of Nature? When questioned as to the ground of our irresistible belief that like causes must always be followed by like effects, Mr. Mill's answer was that it is the result of an induction coextensive with the whole of our experience; Mr. Spencer's answer was that it is a postulate which we make in every act of experience;[1] but the authors of the "Unseen Universe," slightly varying the form of statement, called it a supreme act of faith, — the expression of a trust in God, that He will not "put us to permanent intellectual confusion." Now the more thoroughly we comprehend that process of evolution by which things have come to be what they are, the more we are likely to feel that to deny the everlasting persistence of the spiritual element in Man is to rob the whole process of its meaning. It goes far toward putting us to permanent intellectual confusion, and I do not see that any one has as yet alleged, or is ever likely to allege, a sufficient reason for our accepting so dire an alternative.

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[1] *Darwinism, and other Essays*, vi.

[2] *Outlines of Cosmic Philosophy*, part iii. ch. ii.

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[1] *Outlines of Cosmic Philosophy,* part i. ch. iii.; part ii. ch. i., xvi.; *The Unseen World, and other Essays,* i.; *Darwinism, and other Essays,* vi.

For my own part, therefore, I believe in the immortality of the soul, not in the sense in which I accept the demonstrable truths of science, but as a supreme act of faith in the reasonableness of God's work. Such a belief, relating to regions quite inaccessible to experience, cannot of course be clothed in terms of definite and tangible meaning. For the experience which alone can give us such terms we must await that solemn day which is to overtake us all. The belief can be most quickly defined by its negation, as the refusal to believe that this world is all. The materialist holds that when you have described the whole universe of phenomena of which we can become cognizant under the conditions of the present life, then the whole story is told. It seems to me, on the contrary, that the whole story is not thus told. I feel the omnipresence of mystery in such wise as to make it far easier for me to adopt the view of Euripides, that what we call death may be but the dawning of true knowledge and of true life. The greatest philosopher of modern times, the master and teacher of all who shall study the process of evolution for many a day to come, holds that the conscious soul is not the product of a collocation of material particles, but is in the deepest sense a divine effluence. According to Mr. Spencer, the divine energy which is manifested throughout the knowable universe is the same energy that wells up in us as consciousness. Speaking for myself, I can see no insuperable difficulty in the notion that at some period in the evolution of Humanity this divine spark may have acquired sufficient concentration and steadiness to survive the wreck of material forms and endure forever. Such a crowning wonder seems to me no more than the fit climax to a creative work that has been ineffably beautiful and marvellous in all its myriad stages.

Only on some such view can the reasonableness of the universe, which still remains far above our finite power of comprehension, maintain its ground. There are some minds inaccessible to the class of considerations here alleged, and perhaps there always will be. But on such grounds, if on no other, the faith in immortality is likely to be shared by all who look upon the genesis of the highest spiritual qualities in Man as the goal of Nature's creative work. This view has survived the Copernican revolution in science, and it has survived the Darwinian revolution. Nay, if the foregoing exposition be sound, it is Darwinism which has placed Humanity upon a higher pinnacle than ever. The future is lighted for us with the radiant colours of hope. Strife and sorrow shall disappear. Peace and love shall reign supreme. The dream of poets, the lesson of priest and prophet, the inspiration of the great musician, is confirmed in the light of modern knowledge; and as we gird ourselves up for the work of life, we may look forward to the time when in the truest sense the kingdoms of this world shall become the kingdom of Christ, and he shall reign for ever and ever, king of kings and lord of lords.

THE IDEA OF GOD

AS AFFECTED BY MODERN KNOWLEDGE

To

MY WIFE

IN REMEMBRANCE OF THE SWEET SUNDAY MORNING
UNDER THE APPLE-TREE ON THE HILLSIDE,
WHEN WE TWO SAT LOOKING DOWN INTO FAIRY WOODLAND PATHS,
AND TALKED OF THE THINGS
SINCE WRITTEN IN THIS LITTLE BOOK,
I now dedicate it.

'Αργύριον καὶ χρυσίον οὐχ ὑπάρχει μοι· ὃ δὲ ἔχω, τοῦτό σοι δίδωμι.

PREFACE

WHEN asked to give a second address before the Concord School of Philosophy, I gladly accepted the invitation, as affording a proper occasion for saying certain things which I had for some time wished to say about theism. My address was designed to introduce the discussion of the question whether pantheism is the legitimate outcome of modern science. It seemed to me that the object might best be attained by passing in review the various modifications which the idea of God has undergone in the past, and pointing out the shape in which it is likely to survive the rapid growth of modern knowledge, and especially the establishment of that great doctrine of evolution which is fast obliging us to revise our opinions upon all subjects whatsoever. Having thus in the text outlined the idea of God most likely to be conceived by minds trained in the doctrine of evolution, I left it for further discussion to decide whether the term "pantheism" can properly be applied to such a conception. While much enlightenment may be got from carefully describing the substance of a philosophic doctrine, very little can be gained by merely affixing to it a label; and I could not but feel that my argument would be simply encumbered by the introduction of any question of nomenclature involving such a vague and uninstructive epithet as "pantheism." Such epithets are often regarded with favour and freely used, as seeming to obviate the necessity for that kind of labour to which most people are most averse, — the labour of sustained and accurate thinking. People are too apt to make such general terms do duty in place of a careful examination of facts, and are thus sometimes led to strange conclusions. When, for example, they have heard somebody called an "agnostic," they at once think they know all about him; whereas they have very likely learned nothing that is of the slightest value in characterizing his opinions or his mental attitude. A term that can be applied at once to a Comte, a Mansel, and a Huxley is obviously of little use in the matter of definition. But, it may be asked, in spite of their world-wide differences, do not these three thinkers agree in holding that nothing can be known about the nature of God? Perhaps so, — one cannot answer even this plain question with an unqualified yes; but, granting that they fully agree in this assertion of ignorance, nevertheless, in their philosophic attitudes with regard to this ignorance, in the use they severally make of the assertion, in the way it determines their inferences about all manner of other things, the differences are so vast that nothing but mental confusion can come from a terminology which would content itself by applying to all three the common epithet "agnostic." The case is similar with such a word as "pantheism," which has been familiarly applied to so many utterly diverse systems of thought that it is very hard to tell just what it means. It has been equally applied to the doctrine of "the Hindu philosophers of the orthodox Brahmanical schools," who "hold that all finite existence is an illusion, and life mere vexation and mistake, a blunder or sorry jest of the Absolute;" and to the doctrine of the Stoics, who "went to the other extreme, and held that the universe was the product of perfect reason and in an absolute sense good." (Pollock's "Spinoza," p. 356.) In recent times it has been commonly used as a vituperative epithet, and hurled indiscriminately at such unpopular opinions as do not seem to call for so heavy a missile as the more cruel term "atheism." The writer who sets forth in plain scientific language a physical theory of the universe is liable to be scowled at and called an atheist; but, when the very same ideas are presented in the form of oracular apophthegm or poetic rhapsody, the author is more gently described as "tinctured with pantheism."

But out of the chaos of vagueness in which this unhappy word has been immersed it is perhaps still possible to extract something like a definite meaning. In the broadest sense there are three possible ways in which we may contemplate the universe.

First, we may regard the world of phenomena as sufficient unto itself, and deny that it needs to be referred to any underlying and all-comprehensive unity. Nothing has an ultimate origin or destiny; there is no dramatic tendency in the succession of events, nor any ultimate law to which everything must be referred; there is no reasonableness in the universe save that with which human fancy unwarrantably endows it; the events of the world have no orderly progression like the scenes of a well-constructed plot, but in the manner of their coming and going they constitute simply what Chauncey Wright so aptly called "cosmical weather;" they drift and eddy about in an utterly blind and irrational manner, though now and then evolving, as if by accident, temporary combinations which have to us a rational appearance. This is Atheism, pure and unqualified. It recognizes no Omnipresent Energy.

Secondly, we may hold that the world of phenomena is utterly unintelligible unless referred to an underlying and all-comprehensive unity. All things are manifestations of an Omnipresent Energy which cannot be in any imaginable sense personal or anthropomorphic; out from this eternal source of phenomena all individualities proceed, and into it they must all ultimately return and be absorbed; the events of the world have an orderly progression, but not toward any goal recognizable by us; in the process of evolution there is nothing that from any point of view can be called teleological; the beginning and end of things — that which is Alpha and Omega — is merely an inscrutable essence, a formless void. Such a view as this may properly be called Pantheism. It recognizes an Omnipresent Energy, but virtually identifies it with the totality of things.

Thirdly, we may hold that the world of phenomena is intelligible only when regarded as the multiform manifestation of an Omnipresent Energy that is in some way — albeit in a way quite above our finite comprehension — anthropomorphic or quasi-personal. There is a true objective reasonableness in the universe; its events have an orderly progression, and, so far as those events are brought sufficiently within our ken for us to generalize them exhaustively, their progression is toward a goal that is recognizable by human intelligence; "the process of evolution is itself the working out of a mighty Teleology of which our finite understandings can fathom but the scantiest rudiments" ("Cosmic Philosophy," part iii. ch. ii.); it is indeed but imperfectly that we can describe the dramatic tendency in the succession of events, but we can see enough to assure us of the fundamental fact that there is such a tendency; and this tendency is the objective aspect of that which, when regarded on its subjective side, we call Purpose. Such a theory of things is Theism. It recognizes an Omnipresent Energy, which is none other than the living God.

It is this theistic doctrine which I hold myself, and which in the present essay I have sought to exhibit as the legitimate outcome of modern scientific thought. I was glad to have such an excellent occasion for returning to the subject as the invitation from Concord gave me, because in a former attempt to expound the same doctrine I do not seem to have succeeded in making myself understood. In my "Outlines of Cosmic Philosophy," published in 1874, I endeavoured to set forth a theory of theism identical with that which is set forth in the present essay. But an acute and learned friend, writing under the pseudonym of "Physicus," in his "Candid Examination of Theism" (London, 1878), thus criticises my theory: In it, he says, "while I am able to discern the elements which I think may properly be regarded as common to Theism and to Atheism, I am not able to discern any single element that is specifically distinctive of Theism" (p. 145). The reason for the inability of "Physicus" to discern any such specifically distinctive element is that he misunderstands me as proposing to divest the theistic idea of every shred of anthropomorphism, while still calling it a theistic idea. This, he thinks, would be an utterly illegitimate proceeding, and I quite agree with him. In similar wise my friend Mr. Frederick Pollock, in his admirable work on Spinoza (London, 1880), observes that "Mr. Fiske's doctrine excludes the belief in a so-called Personal God, and the particular forms of religious emotion dependent on it" (p. 356). If the first part of this sentence stood alone, I might pause to inquire how much latitude of meaning may be conveyed in the expression "so-called;" is it meant that I exclude the belief in a Personal God as it was held by Augustine and Paley, or as it was held by Clement and Schleiermacher, or both? But the second clause of the sentence seems to furnish the answer; it seems to imply that I would practically do away with Theism altogether.

Such a serious misstatement of my position, made in perfect good faith by two thinkers so conspicuous for ability and candour, shows that, in spite of all the elaborate care with which the case was stated in "Cosmic Philosophy," some further explanation is needed. It is true that there are expressions in that work which, taken singly and by themselves, might seem to imply a total rejection of theism. Such expressions occur chiefly in the chapter entitled "Anthropomorphic Theism," where great pains are taken to show the inadequacy of the Paley argument from design, and to point out the insuperable difficulties in which we are entangled by the conception of a Personal God as it is held by the great majority of modern theologians who have derived it from Plato and Augustine. In the succeeding chapters, however, it is expressly argued that the total elimination of anthropomorphism from the idea of God is impossible. There are some who, recognizing that the ideas of Personality and Infinity are unthinkable in combination, seek to escape the difficulty by speaking of God as the "Infinite Power;" that is, instead of a symbol derived from our notion of human consciousness, they employ a symbol derived from our notion of force in general. For many philosophic purposes the device is eminently useful; but it should not be forgotten that, while the form of our experience of Personality does not allow us to conceive it as infinite, it is equally true that the form of our experience of Force does not allow us to conceive it as infinite, since we know force only as antagonized by other force. Since, moreover, our notion of force is purely a generalization from our subjective sensations of effort overcoming resistance, there is scarcely less anthropomorphism lurking in the phrase "Infinite Power" than in the phrase "Infinite Person." Now in "Cosmic Philosophy" I argue that the presence of God is the one all-pervading fact of life, from which there is no escape; that while in the deepest sense the nature of Deity is unknowable by finite Man, nevertheless the exigencies of our thinking oblige us to symbolize that nature in some form that has a real meaning for us; and that we cannot symbolize that nature as in any wise physical, but are bound to symbolize it as in some way psychical. I do not here repeat the arguments, but simply state the conclusions. The final conclusion (part iii. ch. iv.) is that we must not say that "God is Force," since such a phrase inevitably calls up those pantheistic notions of blind necessity, which it is my express desire to avoid; but, always bearing in mind the symbolic character of the words, we may say that "God is Spirit." How my belief in the personality of God could be more strongly expressed without entirely deserting the language of modern philosophy and taking refuge in pure mythology, I am unable to see.

There are two points in the present essay which I hope will serve to define more completely the kind of theism which I have tried to present as compatible with the doctrine of evolution. One is the historic contrast between anthropomorphic and cosmic theism regarded in their modes of genesis, and especially as exemplified within the Christian church in the very different methods and results of Augustine on the one hand and Athanasius on the other. The view which I have ventured to designate as "cosmic theism" is no invention of mine; in its most essential features it has been entertained by some of the profoundest thinkers of

Christendom in ancient and modern times, from Clement of Alexandria to Lessing and Goethe and Schleiermacher. The other point is the teleological inference drawn from the argument of my first Concord address on "The Destiny of Man, viewed in the Light of his Origin."

When that address was published, a year ago, I was surprised to find it quite commonly regarded as indicating some radical change of attitude on my part, — a "conversion," perhaps, from one set of opinions to another. Inasmuch as the argument in the "Destiny of Man" was based in every one of its parts upon arguments already published in "Cosmic Philosophy" (1874), and in the "Unseen World" (1876), I naturally could not understand why the later book should impress people so differently from the earlier ones. It presently appeared, however, that none of my friends who had studied the earlier books had detected any such change of attitude; it was only people who knew little or nothing about me, or else the newspapers. Whence the inference seemed obvious that many readers of the "Destiny of Man" must have contrasted it, not with my earlier books which they had not read, but with some vague and distorted notion about my views which had grown up (Heaven knows how or why!) through the medium of "the press;" and thus there might have been produced the impression that those views had undergone a radical change.

It would be little to my credit, however, had my views of the doctrine of evolution and its implications undergone no development or enlargement since the publication of "Cosmic Philosophy." To carry such a subject about in one's mind for ten years, without having any new thoughts about it, would hardly be a proof of fitness for philosophizing. I have for some time been aware of a shortcoming in the earlier work, which it is the purpose of these two Concord addresses in some measure to remedy. That shortcoming was an imperfect appreciation of the goal toward which the process of evolution is tending, and a consequent failure to state adequately how the doctrine of evolution must affect our estimate of Man's place in Nature. Nothing of fundamental importance in "Cosmic Philosophy" needed changing, but a new chapter needed to be written, in order to show how the doctrine of evolution, by exhibiting the development of the highest spiritual human qualities as the goal toward which God's creative work has from the outset been tending, replaces Man in his old position of headship in the universe, even as in the days of Dante and Aquinas.

That which the pre-Copernican astronomy naïvely thought to do by placing the home of Man in the centre of the physical universe, the Darwinian biology profoundly accomplishes by exhibiting Man as the terminal fact in that stupendous process of evolution whereby things have come to be what they are. In the deepest sense it is as true as it ever was held to be, that the world was made for Man, and that the bringing forth in him of those qualities which we call highest and holiest is the final cause of creation. The arguments upon which this conclusion rests, as they are set forth in the "Destiny of Man" and epitomized in the concluding section of the present essay, may all be found in "Cosmic Philosophy;" but I failed to sum them up there and indicate the conclusion, almost within reach, which I had not quite clearly seized. When, after long hovering in the background of consciousness, it suddenly flashed upon me two years ago, it came with such vividness as to seem like a revelation.

This conclusion as to the implications of the doctrine of evolution concerning Man's place in Nature supplies the element wanting in the theistic theory set forth in "Cosmic Philosophy," — the teleological element. It is profoundly true that a theory of things may seem theistic or atheistic in virtue of what it says of Man, no less than in virtue of what it says of God. The craving for a final cause is so deeply rooted in human nature that no doctrine of theism which fails to satisfy it can seem other than lame and ineffective. In writing "Cosmic Philosophy" I fully realized this when, in the midst of the argument against Paley's form of theism, I said that "the process of evolution is itself the working out of a mighty Teleology of which our finite understandings can fathom but the scantiest rudiments." Nevertheless, while the whole momentum of my thought carried me to the conviction that it must be so, I was not yet able to indicate *how* it is so, and I accordingly left the subject with this brief and inadequate hint. Could the point have been worked out then and there, I think it would have left no doubt in the minds of "Physicus" and Mr. Pollock as to the true character of Cosmic Theism.

But hold, cries the scientific inquirer, what in the world are you doing? Are we again to resuscitate the phantom Teleology, which we had supposed at last safely buried between cross-roads and pinned down with a stake? Was not Bacon right in characterizing "final causes" as vestal virgins, so barren has their study proved?

And has not Huxley, with yet keener sarcasm, designated them the *hetairæ* of philosophy, so often have they led men astray? Very true. I do not wish to take back a single word of all that I have said in my chapter on "Anthropomorphic Theism" in condemnation of the teleological method and the peculiar theistic doctrines upon which it rests. As a means of investigation it is absolutely worthless. Nay, it is worse than worthless; it is treacherous, it is debauching to the intellect. But that is no reason why when a distinct dramatic tendency in the events of the universe appears as the *result* of purely scientific investigation, we should refuse to recognize it. It is the object of the "Destiny of Man" to prove that there is such a dramatic tendency; and while such a tendency cannot be regarded as indicative of purpose in the limited anthropomorphic sense, it is still, as I said before, the objective aspect of that which, when regarded on its subjective side, we call Purpose. There is a reasonableness in the universe such as to indicate that the Infinite Power of which it is the multiform manifestation is psychical, though it is impossible to ascribe to Him any of the limited psychical attributes which we know, or to argue from the ways of Man to the ways of God. For, as St. Paul reminds us, "who hath known the mind of the Lord, or who hath been his counsellor?"

It is in this sense that I accept Mr. Spencer's doctrine of the Unknowable. How far my interpretation agrees with his own I do not undertake to say. On such an abstruse matter it is best that one should simply speak for one's self. But in his recent essay on "Retrogressive Religion" he uses expressions which imply a doctrine of theism essentially similar to that here maintained. The "infinite and eternal Energy from which all things proceed," and which is the same power that "in ourselves wells up under the form of consciousness," is certainly the power which is here recognized as God. The term "Unknowable" I have carefully refrained from using; it does not occur in the text of this essay. It describes only one aspect of Deity, but it has been seized upon by shallow writers of every school, treated as if fully synonymous with Deity, and made the theme of the most dismal twaddle that the world has been deluged with since the days of mediæval scholasticism. The latest instance is the wretched positivist rubbish which Mr. Frederic Harrison has mistaken for criticism, and to which it is almost a pity that Mr. Spencer should have felt called upon to waste his valuable time in replying.

That which Mr. Spencer throughout all his works regards as the All-Being, the Power of which "our lives, alike physical and mental, in common with all the activities, organic and inorganic, amid which we live, are but the workings," — this omnipresent Power it pleases Mr. Harrison to call the "All-Nothingness," to describe it as "a logical formula begotten in controversy, dwelling apart from man and the world" (whatever all that may mean), and to imagine its worshippers as thus addressing it in prayer, "O x^n, love us, help us, make us one with thee!" If Mr. Harrison's aim were to understand, rather than to misrepresent, the religious attitude which goes with such a conception of Deity as Mr. Spencer's, he could nowhere find it more happily expressed than in these wonderful lines of Goethe: —

> "Weltseele, komm, uns zu durchdringen!
> Dann mit dem Weltgeist selbst zu ringen
> Wird unsrer Kräfte Hochberuf.
> Theilnehmend führen gute Geister,
> Gelinde leitend, höchste Meister,
> Zu dem der alles schafft und schuf."

Mr. Harrison is enabled to perform his antics simply because he happens to have such a word as "Unknowable" to play with. Yet the word which has been put to such unseemly uses is, when properly understood, of the highest value in theistic philosophy. That Deity *per se* is not only unknown but unknowable is a truth which Mr. Spencer has illustrated with all the resources of that psychologic analysis of which he is incomparably the greatest master the world has ever seen ; but it is not a truth which originated with him, or the demonstration of which is tantamount, as Mr. Harrison would have us believe, to the destruction of all religion. Among all the Christian theologians that have lived, there are few higher names than Athanasius, who also regarded Deity *per se* as unknowable, being revealed to mankind only through incarnation in Christ. It is not as failing to recognize its value that I have refrained in this essay from using the term " Unknowable ; " it is because so many false and stupid inferences have been drawn from Mr. Spencer's use of the word that it seemed worth while to show how a doctrine essentially similar to his might be expounded without introducing it. For further elucidation I will simply repeat in this connection what I wrote long ago : " It is enough to remind the reader that Deity is unknowable just in so far as it is not manifested to consciousness through the phenomenal world, — knowable just in so far as it is thus manifested : unknowable in so far as infinite and absolute, — knowable in the order of its phenomenal manifestations; knowable, in a symbolic way, as the Power which is disclosed in every throb of the mighty rhythmic life of the universe; knowable as the eternal Source of a Moral Law which is implicated with each action of our lives, and in obedience to which lies our only guaranty of the happiness which is incorruptible, and which neither inevitable misfortune nor unmerited obloquy can take away. Thus, though we may not by searching find out God, though we may not compass infinitude or attain to absolute knowledge, we may at least know all that it concerns us to know, as intelligent and responsible beings. They who seek to know more than this, to transcend the conditions under which alone is knowledge possible, are, in Goethe's profound language, as wise as little children who, when they have looked into a mirror, turn it around to see what is behind it." ("Cosmic Philosophy," part iii. ch. v.)

The present essay must be regarded as a sequel to the "Destiny of Man," — so much so that the force of the argument in the concluding section can hardly be appreciated without reference to the other book. The two books, taken together, contain the bare outlines of a theory of religion which I earnestly hope at some future time to state elaborately in a work on the true nature of Christianity. Some such scheme had begun vaguely to dawn upon my mind when I was fourteen years old, and thought in the language of the rigid Calvinistic orthodoxy then prevalent in New England. After many and extensive changes of opinion, the idea assumed definite shape in the autumn of 1869, when I conceived the plan of a book to be entitled "Jesus of Nazareth and the Founding of Christianity," — a work intended to deal on the one hand with the natural genesis of the complex aggregate of beliefs and aspirations known as Christianity, and on the other hand with the metamorphoses which are being wrought in this aggregate by modern knowledge and modern theories of the universe. Such a book, involving a treatment both historical and philosophical, requires long and varied preparation; and I have always regarded my other books, published from time to time, as simply wayside studies preliminary to the undertaking of this complicated and difficult task. While thus habitually shaping my work with reference to this cherished idea, I have written some things which are in a special sense related to it. The rude outlines of a very small portion of the historical treatment are contained in the essays on "The Jesus of History," and "The Christ of Dogma," published in the volume entitled "The Unseen World, and other Essays." The outlines of the philosophical treatment are partially set forth in the "Destiny of Man" and in the present work.

It amused me to see that almost every review of the "Destiny of Man" took pains to state that it was my Concord address "rewritten and expanded." Such trifles help one to understand the helter-skelter way in which more important things get said and believed. The "Destiny of Man" was printed exactly as it was delivered at Concord, without the addition, or subtraction, or alteration of a single word. The case is the same with the present work.

PETERSHAM, *September* 6, 1885.

THE IDEA OF GOD

I

DIFFICULTY OF EXPRESSING THE IDEA OF GOD SO THAT IT CAN BE READILY UNDERSTOOD

IN Goethe's great poem, while Faust is walking with Margaret at eventide in the garden, she asks him questions about his religion. It is long since he has been shriven or attended mass; does he, then, believe in God? — a question easy to answer with a simple yes, were it not for the form in which it is put. The great scholar and subtle thinker, who has delved in the deepest mines of philosophy and come forth weary and heavy-laden with their boasted treasures, has framed a very different conception of God from that entertained by the priest at the confessional or the altar, and how is he to make this intelligible to the simple-minded girl that walks by his side? Who will make bold to declare that he can grasp an idea of such overwhelming vastness as the idea of God, yet who that hath the feelings of a man can bring himself to cast away a belief that is indispensable to the rational and healthful workings of the mind? So long as the tranquil dome of heaven is raised above our heads and the firm-set earth is spread forth beneath our feet, while the everlasting stars course in their mighty orbits and the lover gazes with ineffable tenderness into the eyes of her that loves him, so long, says Faust, must our hearts go out toward Him that upholds and comprises all. Name or describe as we may the Sustainer of the world, the eternal fact remains there, far above our comprehension, yet clearest and most real of all facts. To name and describe it, to bring it within the formulas of theory or creed, is but to veil its glory as when the brightness of heaven is enshrouded in mist and smoke. This has a pleasant sound to Margaret's ears. It reminds her of what the parson sometimes says, though couched in very different phrases; and yet she remains uneasy and unsatisfied. Her mind is benumbed by the presence of an idea confessedly too great to be grasped. She feels the need of some concrete symbol that can be readily apprehended; and she hopes that her lover has not been learning bad lessons from Mephistopheles.

The difficulty which here besets Margaret must doubtless have been felt by every one when confronted with the thoughts by which the highest human minds have endeavoured to disclose the hidden life of the universe and interpret its meaning. It is a difficulty which baffles many, and they who surmount it are few indeed. Most people content themselves through life with a set of concrete formulas concerning Deity, and vituperate as atheistic all conceptions which refuse to be compressed within the narrow limits of their creed. For the great mass of men the idea of God is quite overlaid and obscured by innumerable symbolic rites and doctrines that have grown up in the course of the long historic development of religion. All such rites and doctrines had a meaning once, beautiful and inspiring or terrible and forbidding, and many of them still retain it. But whether meaningless or fraught with significance, men have wildly clung to them as shipwrecked mariners cling to the drifting spars that alone give promise of rescue from threatening death. Such concrete symbols have in all ages been argued and fought for until they have come to seem the essentials of religion; and new moons and sabbaths, decrees of councils and articles of faith, have usurped the place of the living God. In every age the theory or discovery — however profoundly theistic in its real import — which has thrown discredit upon such symbols has been stigmatized as subversive of religion, and its adherents have been reviled and persecuted. It is, of course, inevitable that this should be so.

To the half-educated mind a theory of divine action couched in the form of a legend, in which God is depicted as entertaining human purposes and swayed by human passions, is not only intelligible, but impressive. It awakens emotion, it speaks to the heart, it threatens the sinner with wrath to come or heals the wounded spirit with sweet whispers of consolation. However mythical the form in which it is presented, however literally false the statements of which it is composed, it seems profoundly real and substantial. Just in so far as it is crudely concrete, just in so far as its terms can be vividly realized by the ordinary mind, does such a theological theory seem weighty and true. On the other hand, a theory of divine action which, discarding as far as possible the aid of concrete symbols, attempts to include within its range the endlessly complex operations that are forever going on throughout the length and breadth of the knowable universe, — such a theory is to the ordinary mind unintelligible. It awakens no emotion because it is not understood. Though it may be the nearest approximation to the truth of which the human intellect is at the present moment capable, though the statements of which it is composed may be firmly based upon demonstrated facts in nature, it will nevertheless seem eminently unreal and uninteresting. The dullest peasant can understand you when you tell him that honey is sweet, while a statement that the ratio of the circumference of a circle to its diameter may be expressed by the formula $\pi = 3.14159$ will sound as gibberish in his ears; yet the truth embodied in the latter statement is far more closely implicated with every act of the peasant's life, if he only knew it, than the truth expressed in the former. So the merest child may know enough to marvel at the Hebrew legend of the burning bush, but only the ripest scholar can begin to understand the character of the mighty problems with which Spinoza was grappling when he had so much to say about *natura naturans* and *natura naturata.*

For these reasons all attempts to study God as revealed in the workings of the visible universe, and to characterize the divine activity in terms derived from such study, have met with discouragement, if not with obloquy. As substituting a less easily comprehensible formula for one that is more easily comprehensible, they seem to be frittering away the idea of God, and reducing it to an empty abstraction. There is a further reason for the dread with which such studies are commonly regarded. The theories of divine action accepted as orthodox by the men of any age have been bequeathed to them by their forefathers of an earlier age. They were originally framed with reference to assumed facts of nature which advancing knowledge is continually discrediting and throwing aside. Each forward step in physical science obliges us to contemplate the universe from a somewhat altered point of view, so that the mutual relations of its parts keep changing as in an ever-shifting landscape. The notions of the world and its Maker with which we started by and by prove meagre and unsatisfying; they no longer fit in with the general scheme of our knowledge. Hence the men who are wedded to the old notions are quick to sound the alarm. They would fain deter us from taking the forward step which carries us to a new standpoint. Beware of science, they cry, lest with its dazzling discoveries and adventurous speculations it rob us of our soul's comfort and leave us in a godless world. Such in every age has been the cry of the more timid and halting spirits; and their fears have found apparent confirmation in the behaviour of a very different class of thinkers. As there are those who live in perpetual dread of the time when science shall banish God from the world, so, on the other hand, there are those who look forward with longing to such a time, and in their impatience are continually starting up and proclaiming that at last it has come. There are those who have indeed learned a lesson from Mephistopheles, the "spirit that forever denies." These are they that say in their hearts, "There is no God," and "congratulate themselves that they are going to die like the beasts." Rushing into the holiest arcana of philosophy, even where angels fear to tread, they lay hold of each new discovery in science that modifies our view of the universe, and herald it as a crowning victory for the materialists, — a victory which is ushering in the happy day when atheism is to be the creed of all men. It is in view of such philosophizers that the astronomer, the chemist, or the anatomist, whose aim is the dispassionate examination of evidence and the unbiassed study of phenomena, may fitly utter the prayer, "Lord, save me from my friends!"

Thus through age after age has it fared with men's discoveries in science, and with their thoughts about God and the soul. It was so in the days of Galileo and Newton, and we have found it to be so in the days of Darwin and Spencer. The theologian exclaims, If planets are held in place by gravitation and tangential momentum, and if the highest forms of life have been developed by natural selection and direct adaptation, then the universe is swayed by blind forces, and nothing is left for God to do: how impious and terrible the thought! Even so, echoes the favourite atheist, the Lamettrie or Büchner of the day; the universe, it seems, has always got on without a God, and accordingly there is none: how noble and cheering the thought! And as thus age after age they wrangle, with their eyes turned away from the light, the world goes on to larger and larger knowledge in spite of them, and does not lose its faith, for all these darkeners of counsel may say. As in the roaring loom of Time the endless web of events is woven, each strand shall make more and more clearly visible the living garment of God.

II

THE RAPID GROWTH OF MODERN KNOWLEDGE

AT no time since men have dwelt upon the earth have their notions about the universe undergone so great a change as in the century of which we are now approaching the end. Never before has knowledge increased so rapidly; never before has philosophical speculation been so actively conducted, or its results so widely diffused. It is a characteristic of organic evolution that numerous progressive tendencies, for a long time inconspicuous, now and then unite to bring about a striking and apparently sudden change; or a set of forces, quietly accumulating in one direction, at length unlock some new reservoir of force and abruptly inaugurate a new series of phenomena, as when water rises in a tank until its overflow sets whirling a system of toothed wheels. It may be that Nature makes no leaps, but in this way she now and then makes very long strides. It is in this way that the course of organic development is marked here and there by memorable epochs, which seem to open new chapters in the history of the universe. There was such an epoch when the common ancestor of ascidian and amphioxus first showed rudimentary traces of a vertebral column. There was such an epoch when the air-bladder of early amphibians began to do duty as a lung. Greatest of all, since the epoch, still hidden from our ken, when organic life began upon the surface of the globe, was the birth of that new era when, through a wondrous change in the direction of the working of natural selection, Humanity appeared upon the scene. In the career of the human race we can likewise point to periods in which it has become apparent that an immense stride was taken. Such a period marks the dawning of human history, when after countless ages of desultory tribal warfare men succeeded in uniting into comparatively stable political societies, and through the medium of written language began handing down to posterity the record of their thoughts and deeds. Since that morning twilight of history there has been no era so strongly marked, no change so swift or so far-reaching in the conditions of human life, as that which began with the great maritime discoveries of the fifteenth century and is approaching its culmination today. In its earlier stages this modern era was signalized by sporadic achievements of the human intellect, great in themselves and leading to such stupendous results as the boldest dared not dream of. Such achievements were the invention of printing, the telescope and microscope, the geometry of Descartes, the astronomy of Newton, the physics of Huyghens, the physiology of Harvey. Man's senses were thus indefinitely enlarged as his means of registration were perfected; he became capable of extending physical inferences from the earth to the heavens; and he made his first acquaintance with that luminiferous ether which was by and by to reveal the intimate structure of matter in regions far beyond the power of the microscope to penetrate.

It is only within the present century that the vastness of the changes thus beginning to be wrought has become apparent. The scientific achievements of the human intellect no longer occur sporadically: they follow one upon another, like the organized and systematic conquests of a resistless army. Each new discovery becomes at once a powerful implement in the hands of innumerable workers, and each year wins over fresh regions of the universe from the unknown to the known. Our own generation has become so wonted to this unresting march of discovery that we already take it as quite a matter of course. Our minds become easily deadened to its real import, and the examples we cite in illustration of it have an air of triteness. We scarcely need to be reminded that all the advances made in locomotion, from the days of Nebuchadnezzar to those of Andrew Jackson, were as nothing compared to the change that has been wrought within a few years by the introduction of railroads. In these times, when Puck has fulfilled his boast and put a girdle about the earth in forty minutes, we are not yet perhaps in danger of forgetting that a century has not elapsed since he who caught the lightning upon his kite was laid in the grave. Yet the lesson of these facts, as well as of the grandmother's spinning-wheel that stands by the parlour fireside, is well to bear in mind. The change therein exemplified since Penelope plied her distaff is far less than that which has occurred within the memory of living men. The developments of machinery, which have worked such wonders, have greatly altered the political conditions of human society, so that a huge republic like the United States is now as snug and compact and easily manageable as the tiny republic of Switzerland in the eighteenth century. The number of men that can live upon a given area of the earth's surface has been multiplied manifold, and while the mass of human life has thus increased, its value has been at the same time enhanced.

In these various applications of physical theory to the industrial arts, countless minds, of a class that formerly were not reached by scientific reasoning at all, are now brought into daily contact with complex and subtle operations of matter, and their habits of thought are thus notably modified. Meanwhile, in the higher regions of chemistry and molecular physics the progress has been such that no description can do it justice. When we reflect that a fourth generation has barely had time to appear on the scene since Priestley discovered that there was such a thing as oxygen, we stand awestruck before the stupendous pile of chemical science which has been reared in this brief interval. Our knowledge thus gained of the molecular and atomic structure of matter has been alone sufficient to remodel our conceptions of the universe from beginning to end. The case of molecular physics is equally striking. The theory of the conservation of energy, and the discovery that light, heat, electricity, and magnetism are differently conditioned modes of undulatory motion transformable each into the other, are not yet fifty years old. In physical astronomy we remained until 1839 confined within the limits of the solar system, and even here the Newtonian theory had not yet won its crowning triumph in the discovery of the planet Neptune. To-day we not only measure the distances and movements of many stars, but by means of spectrum analysis are able to tell what they are made of. It is more than a century since the nebular hypothesis, by which we explain the development of stellar systems, was first propounded by Immanuel Kant, but it is only within thirty years that it has been generally adopted by astronomers; and among the outward illustrations of its essential soundness none is more remarkable than its surviving such an enlargement of our knowledge. Coming to the geologic study of the changes that have taken place on the earth's surface, it was in 1830 that Sir Charles Lyell published the book which first placed this study upon a scientific basis. Cuvier's classification of past and present forms of animal life, which laid the foundations alike of comparative anatomy and of palæontology, came but little earlier. The cell-doctrine of Schleiden and Schwann, prior to which modern biology can hardly be said to have existed, dates from 1839; and it was only ten years before that the scientific treatment of embryology began with Von Baer. At the present moment, twenty-six years have not elapsed since the epoch-making work of Darwin first announced to the world the discovery of natural selection.

In the cycle of studies which are immediately concerned with the career of mankind, the rate of progress has been no less marvellous. The scientific study of human speech may be said to date from the flash of insight which led

Friedrich Schlegel in 1808 to detect the kinship between the Aryan languages. From this beginning to the researches of Fick and Ascoli in our own time, the quantity of achievement rivals anything the physical sciences can show. The study of comparative mythology, which has thrown such light upon the primitive thoughts of mankind, is still younger, — is still, indeed, in its infancy. The application of the comparative method to the investigation of laws and customs, of political and ecclesiastical and industrial systems, has been carried on scarcely thirty years; yet the results already obtained are obliging us to rewrite the history of mankind in all its stages. The great achievements of archæologists — the decipherment of Egyptian hieroglyphs and of cuneiform inscriptions in Assyria and Persia, the unearthing of ancient cities, the discovery and classification of primeval implements and works of art in all quarters of the globe — belong almost entirely to the nineteenth century. These discoveries, which have well-nigh doubled for us the length of the historic period, have united with the quite modern revelations of geology concerning the ancient glaciation of the temperate zones, to give us an approximate idea of the age of the human race[1] and the circumstances attending its diffusion over the earth. It has thus at length become possible to obtain something like the outlines of a comprehensive view of the history of the creation, from the earliest stages of condensation of our solar nebula down to the very time in which we live, and to infer from the characteristics of this past evolution some of the most general tendencies of the future.

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[1] *Excursions of an Evolutionist*, ii.

All this accumulation of physical and historical knowledge has not failed to react upon our study of the human mind itself. In books of logic the score of centuries between Aristotle and Whately saw less advance than the few years between Whately and Mill. In psychology the work of Fechner and Wundt and Spencer belongs to the age in which we are now living. When to all this variety of achievement we add what has been done in the critical study of literature and art, of classical and Biblical philology, and of metaphysics and theology, illustrating from fresh points of view the history of the human mind, the sum total becomes almost too vast to be comprehended. This century, which some have called an age of iron, has been also an age of ideas, an era of seeking and finding the like of which was never known before. It is an epoch the grandeur of which dwarfs all others that can be named since the beginning of the historic period, if not since Man first became distinctively human. In their mental habits, in their methods of inquiry, and in the data at their command, "the men of the present day who have fully kept pace with the scientific movement are separated from the men whose education ended in 1830 by an immeasurably wider gulf than has ever before divided one progressive generation of men from their predecessors."[1] The intellectual development of the human race has been suddenly, almost abruptly, raised to a higher plane than that upon which it had proceeded from the days of the primitive troglodyte to the days of our great-grandfathers. It is characteristic of this higher plane of development that the progress which until lately was so slow must henceforth be rapid. Men's minds are becoming more flexible, the resistance to innovation is weakening, and our intellectual demands are multiplying while the means of satisfying them are increasing. Vast as are the achievements we have just passed in review, the gaps in our knowledge are immense, and every problem that is solved but opens a dozen new problems that await solution. Under such circumstances there is no likelihood that the last word will soon be said on any subject. In the eyes of the twenty-first century the science of the nineteenth will doubtless seem very fragmentary and crude. But the men of that day, and of all future time, will no doubt point back to the age just passing away as the opening of a new dispensation, the dawning of an era in which the intellectual development of mankind was raised to a higher plane than that upon which it had hitherto proceeded.

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[1] *Outlines of Cosmic Philosophy,* part i. ch. viii.

As the inevitable result of the thronging discoveries just enumerated, we find ourselves in the midst of a mighty revolution in human thought. Time-honoured creeds are losing their hold upon men; ancient symbols are shorn of their value; everything is called in question. The controversies of the day are not like those of former times. It is no longer a question of hermeneutics, no longer a struggle between abstruse dogmas of rival churches. Religion itself is called upon to show why it should any longer claim our allegiance. There are those who deny the existence of God. There are those who would explain away the human soul as a mere group of fleeting phenomena attendant upon the collocation of sundry particles of matter. And there are many others who, without committing themselves to these positions of the atheist and the materialist, have nevertheless come to regard religion as practically ruled out from human affairs. No religious creed that man has ever devised can be made to harmonize in all its features with modern knowledge. All such creeds were constructed with reference to theories of the universe which are now utterly and hopelessly discredited. How, then, it is asked, amid the general wreck of old beliefs, can we hope that the religious attitude in which from time immemorial we have been wont to contemplate the universe can any longer be maintained? Is not the belief in God perhaps a dream of the childhood of our race, like the belief in elves and bogarts which once was no less universal? and is not modern science fast destroying the one as it has already destroyed the other?

Such are the questions which we daily hear asked, sometimes with flippant eagerness, but oftener with anxious dread. In view of them it is well worth while to examine the idea of God, as it has been entertained by mankind from the earliest ages, and as it is affected by the knowledge of the universe which we have acquired in recent times. If we find in that idea, as conceived by untaught thinkers in the twilight of antiquity, an element that still survives the widest and deepest generalizations of modern times, we have the strongest possible reason for believing that the idea is permanent and answers to an Eternal Reality. It was to be expected that conceptions of Deity handed down from primitive men should undergo serious modification. If it can be shown that the essential element in these conceptions must survive the enormous additions to our knowledge which have distinguished the present age above all others since man became man, then we may believe that it will endure so long as man endures; for it is not likely that it can ever be called upon to pass a severer ordeal.

All this will presently appear in a still stronger light, when we have set forth the common characteristic of the modifications which the idea of God has already undergone, and the nature of the opposition between the old and the new knowledge with which we are now confronted. Upon this discussion we have now to enter, and we shall find it leading us to the conclusion that throughout all possible advances in human knowledge, so far as we can see, the essential position of theism must remain unshaken.

III

SOURCES OF THE THEISTIC IDEA

OUR argument may fitly begin with an inquiry into the sources of the theistic idea and the shape which it has universally assumed among untutored men. The most primitive element which it contains is doubtless the notion of *dependence* upon something outside of ourselves. We are born into a world consisting of forces which sway our lives and over which we can exercise no control. The individual man can indeed make his volition count for a very little in modifying the course of events, but this end necessitates strict and unceasing obedience to powers that cannot be tampered with. To the behaviour of these external powers our actions must be adapted under penalty of death. And upon grounds no less firm than those on which we believe in any externality whatever, we recognize that these forces antedated our birth and will endure after we have disappeared from the scene. No one supposes that he makes the world for himself, so that it is born and dies with him. Every one perforce contemplates the world as something existing independently of himself, as something into which he has come, and from which he is to go; and for his coming and his going, as well as for what he does while part of the world, he is dependent upon something that is not himself.

Between ancient and modern man, as between the child and the adult, there can be no essential difference in the recognition of this fundamental fact of life. The primitive man could not, indeed, state the case in this generalized form, any more than a young child could state it, but the facts which the statement covers were as real to him as they are to us.[1] The primitive man knew nothing of a world, in the modern sense of the word. The conception of that vast consensus of forces which we call the world or universe is a somewhat late result of culture; it was reached only through ages of experience and reflection. Such an idea lay beyond the horizon of the primitive man. But while he knew not the world, he knew bits and pieces of it; or, to vary the expression, he had his little world, chaotic and fragmentary enough, but full of dread reality for him. He knew what it was to deal from birth until death with powers far mightier than himself. To explain these powers, to make their actions in any wise intelligible, he had but one available resource; and this was so obvious that he could not fail to employ it. The only source of action of which he knew anything, since it was the only source which lay within himself, was the human will;[1] and in this respect, after all, the philosophy of the primeval savage was not so very far removed from that of the modern scientific thinker. The primitive man could see that his own actions were prompted by desire and guided by intelligence, and he supposed the same to be the case with the sun and the wind, the frost and the lightning. All the forces of outward nature, so far as they came into visible contact with his life, he personified as great beings which were to be contended with or placated. This primeval philosophy, once universal among men, has lasted far into the historic period, and it is only slowly and bit by bit that it has been outgrown by the most highly civilized races. Indeed the half-civilized majority of mankind have by no means as yet cast it aside, and among savage tribes we may still see it persisting in all its original crudity. In the mythologies of all peoples, of the Greeks and Hindus and Norsemen, as well as of the North American Indians and the dwellers in the South Sea Islands, we find the sun personified as an archer or wanderer, the clouds as gigantic birds, the tempest as a devouring dragon; and the tales of gods and heroes, as well as of trolls and fairies, are made up of scattered and distorted fragments of nature myths, of which the primitive meaning had long been forgotten when the ingenuity of modern scholarship laid it bare.[1]

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[1] See note A at the end of the volume.

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[1] *Outlines of Cosmic Philosophy*, part i. ch. vi., vii.

In all this personification of physical phenomena our prehistoric ancestors were greatly assisted by that theory of ghosts which was perhaps the earliest speculative effort of the human mind. Travellers have now and then reported the existence of races of men quite destitute of religion, or of what the observer has learned to recognize as religion; but no one has ever discovered a race of men devoid of a belief in ghosts. The mass of crude inference which makes up the savage's philosophy of nature is largely based upon the hypothesis that every man has *another self*, a double, or wraith, or ghost. This "hypothesis of the *other self*, which serves to account for the savage's wanderings during sleep in strange lands and among strange people, serves also to account for the presence in his dreams of parents, comrades, or enemies, known to be dead and buried. The other self of the dreamer meets and converses with the other selves of his dead brethren, joins with them in the hunt, or sits down with them to the wild cannibal banquet. Thus arises the belief in an ever-present world of ghosts, a belief which the entire experience of uncivilized man goes to strengthen and expand."[1] Countless tales and superstitions of savage races show that the hypothesis of the other self is used to explain the phenomena of hysteria and epilepsy, of shadows, of echoes, and even of the reflection of face and gestures in still water. It is not only men, moreover, who are provided with other selves. Dumb beasts and plants, stone hatchets and arrows, articles of clothing and food, all have their ghosts;[2] and when the dead chief is buried, his wives and servants, his dogs and horses, are slain to keep him company, and weapons and trinkets are placed in his tomb to be used in the spirit land. Burial places of primitive men, ages before the dawn of history, bear testimony to the immense antiquity of this savage philosophy. From this wholesale belief in ghosts to the interpretation of the wind or the lightning as a person animated by an indwelling soul and endowed with quasi-human passions and purposes, the step is not a long one. The latter notion grows almost inevitably out of the former, so that all races of men without exception have entertained it. That the mighty power which uproots trees and drives the storm-clouds across the sky should resemble a human soul is to the savage an unavoidable inference. "If the fire burns down his hut, it is because the fire is a person with a soul, and is angry with him, and needs to be coaxed into a kindlier mood by means of prayer or sacrifice." He has no alternative but to regard fire-soul as something akin to human-soul; his philosophy makes no distinction between the human ghost and the elemental demon or deity.

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[1] *Myths and Myth-Makers*, i.

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[1] *Myths and Myth-Makers*, vii.

[2] Ibid.

It was in accordance with this primitive theory of things that the earliest form of religious worship was developed. In all races of men, so far as can be determined, this was the worship of ancestors.[1] The other self of the dead chieftain continued after death to watch over the interests of the tribe, to defend it against the attacks of enemies, to reward brave warriors, and to punish traitors and cowards. His favour must be propitiated with ceremonies like those in which a subject does homage to a living ruler. If offended by neglect or irreverent treatment, defeat in battle, damage by flood or fire, visitations of famine or pestilence, were interpreted as marks of his anger. Thus the spirits animating the forces of nature were often identified with the ghosts of ancestors, and mythology is filled with traces of the confusion. In the Vedic religion the *pitris*, or "fathers," live in the sky along with Yama, the original *pitri* of mankind: they are very busy with the weather; they send down rain to refresh the thirsty earth, or anon parch the fields till the crops perish of drought; and they rush along in the roaring tempest, like the weird host of the wild huntsman Wodan. To the ancient Greek the blue sky Uranos was the father of gods and men, and throughout antiquity this mingling of ancestor worship with nature worship was general. With the systematic development of ethnic religions, in some instances ancestor worship remained dominant, as with the Chinese, the Japanese, and the Romans; in others, a polytheism based upon nature worship acquired supremacy, as with the Hindus and Greeks, and our own Teutonic forefathers. The great divinities of the Hellenic pantheon are all personifications of physical phenomena. At a comparatively late date the Roman adopted these divinities and paid to them a fashionable and literary homage, but his solemn and heartfelt rites were those with which he worshipped the *lares* and *penates* in the privacy of his home. His hospitable treatment of the gods of a vanquished people was the symptom of a commingling of the various local religions of antiquity which insured their mutual destruction and prepared the way for their absorption into a far grander and truer system.[1]

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[1] *Myths and Myth-Makers*, vii.; *Excursions of an Evolutionist*, ix.

[1] *American Political Ideas*, i.

IV

DEVELOPMENT OF MONOTHEISM

SUCH an allusion to the Romans, in an exposition like the present one, is not without its significance. It was partly through political circumstances that a truly theistic idea was developed out of the chaotic and fragmentary ghost theories and nature-worship of the primeval world. To the framing of the vastest of all possible conceptions, the idea of God, man came but slowly. This nature-worship and ancestor-worship of early times was scarcely theism. In their recognition of man's utter dependence upon something outside of himself which yet was not wholly unlike himself, these primitive religions contained the essential germ out of which theism was to grow; but it is a long way from the propitiation of ghosts and the adoration of the rising sun to the worship of the infinite and eternal God, the maker of heaven and earth, in whom we live, and move, and have our being. Before men could arrive at such a conception, it was necessary for them to obtain some integral idea of the heaven and the earth; it was necessary for them to frame, however in-adequately, the conception of a physical universe. Such a conception had been reached by civilized peoples before the Christian era, and by the Greeks a remarkable beginning had been made in the generalization and interpretation of physical phenomena. The intellectual atmosphere of Alexandria, for two centuries before and three centuries after the time of Christ, was more modern than anything that followed down to the days of Bacon and Descartes; and all the leaders of Greek thought since Anaxagoras had been virtually or avowedly monotheists. As the phenomena of nature were generalized, the deities or superhuman beings regarded as their sources were likewise generalized, until the conception of nature as a whole gave rise to the conception of a single Deity as the author and ruler of nature; and in accordance with the order of its genesis, this notion of Deity was still the notion of a Being possessed of psychical attributes, and in some way like unto Man.

But there was another cause, besides scientific generalization, which led men's minds toward monotheism. The conception of tutelar deities, which was the most prominent practical feature of ancestor-worship, was directly affected by the political development of the peoples of antiquity. As tribes were consolidated into nations, the tutelar gods of the tribes became generalized, or the god of some leading tribe came to supersede his fellows, until the result was a single national Deity, at first regarded as the greatest among gods, afterwards as the only God. The most striking instance of this method of development is afforded by the Hebrew conception of Jehovah. The most primitive form of Hebrew religion discernible in the Old Testament is a fetichism, or very crude polytheism, in which ancestor-worship becomes more prominent than nature-worship. At first the *teraphim*, or tutelar household deities, play an important part, but nature-gods, such as Baal, and Moloch, and Astarte, are extensively worshipped. It is the plural *elohim* who create the earth, and whose sons visit the daughters of antediluvian men. The tutelar deity, Jehovah, is originally thought of as one of the *elohim*, then as chief among *elohim*, and Lord of the hosts of heaven. Through his favour his chosen prophet overcomes the prophets of Baal, he is greater than the deities of neighbouring peoples, he is the only true god, and thus finally he is thought of as the only God, and his name becomes the symbol of monotheism. The Jews have always been one of the most highly gifted races in the world. In antiquity they developed an intense sentiment of nationality, and for earnestness and depth of ethical feeling they surpassed all other peoples. The conception of Jehovah set forth in the writings of the prophets was the loftiest conception of Deity anywhere attained before the time of Christ; in ethical value it immeasurably surpassed anything to be found in the pantheon of the Greeks and Romans. It was natural that such a conception of Deity should be adopted throughout the Roman world. At the beginning of the Christian era the classic polytheism had well-nigh lost its hold upon men's minds; its value had become chiefly literary, as a mere collection of pretty stories; it had begun its descent into the humble realm of folk-lore. For want of anything better people had recourse to elaborate Eastern ceremonials, or contented themselves with the time-honoured domestic worship of the *lares* and *penates*. Yet their minds were ripe for some kind of monotheism, and in order that the Jewish conception should come to be generally adopted, it was only necessary that it should be freed from its limitations of nationality, and that Jehovah should be set forth as Sustainer of the universe and Father of all mankind. This was done by Jesus and Paul. The theory of divine action implied throughout the gospels and the epistles was the first complete monotheism attained by mankind, or at least by that portion of it from which our modern civilization has descended. Here for the first time we have the idea of God dissociated from the limiting circumstances with which it had been entangled in all the ethnic religions of antiquity. Individual thinkers here and there had already, doubtless, reached an equally true conception, as was shown by Kleanthes in his sublime hymn to Zeus;[1] but it was now for the first time set forth in such wise as to win assent from the common folk as well as the philosophers, and to make its way into the hearts of all men. Its acceptance was hastened, and its hold upon mankind immeasurably strengthened, by the divinely beautiful ethical teaching in which Jesus couched it, — that teaching, so often misunderstood yet so profoundly true, which heralded the time when Man shall have thrown off the burden of his bestial inheritance and, strife and sorrow shall cease from the earth.[2]

We shall presently see that in its fundamental features the theism of Jesus and Paul was so true that it must endure as long as man endures. Changes of statement may alter the outward appearance of it, but the kernel of truth will remain the same forever. But the shifting body of religious doctrine known as Christianity has at various times contained much that is unknown to this pure theism, and much that has shown itself to be ephemeral in its hold upon men. The change from polytheism to monotheism could not be thoroughly accomplished all at once. As Christianity spread over the Roman world it became encrusted with pagan notions and observances, and a similar process went on during the conversion of the Teutonic barbarians. Yuletide and Easter and other church holidays were directly adopted from the old nature-worship; the adoration of tutelar household deities survived in the homage paid to patron saints; and the worship of the Berecynthian Mother was continued in that of the Virgin Mary.[1] Even the name *God*, applied to the Deity throughout Teutonic Christendom, seems to be neither more nor less than *Wodan*, the personification of the storm-wind, the supreme divinity of our pagan forefathers.[2]

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[1] *The Unseen World, and other Essays*, i.

[2] See above, pp. 73–75.

That Christianity should thus have retained names and symbols and rites belonging to heathen antiquity was inevitable. The system of Christian theism was the work of some of the loftiest minds that have ever appeared upon the earth; but it was adopted by millions of men and women, of all degrees of knowledge and ignorance, of keenness and dulness, of spirituality and grossness, and these brought to it their various inherited notions and habits of thought. In all its ages, therefore, Christian theism has meant one thing to one person, and another thing to another. While the highest Christian minds have always been monotheistic, the multitude have outgrown polytheism but slowly; and even the monotheism of the highest minds has been coloured by notions ultimately derived from the primeval ghost-world which have interfered with its purity, and have seriously hampered men in their search after truth.

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[1] *Excursions of an Evolutionist*, ix.

[2] See note B at the end of the volume.

In illustration of this point we have now to notice two strongly contrasted views of the divine nature which have been held by Christian theists, and to observe their bearings upon the scientific thought of modern times.

V

THE IDEA OF GOD AS IMMANENT IN THE WORLD

WE have seen that since the primitive savage philosophy did not distinguish between the human ghost and the elemental dæmon or deity, the religion of antiquity was an inextricable tangle of ancestor-worship with nature-worship. Nevertheless, among some peoples the one, among others the other, became predominant. I think it can hardly be an accidental coincidence that nature-worship predominated with the Greeks and Hindus, the only peoples of antiquity who accomplished anything in the exact sciences, or in metaphysics. The capacity for abstract thinking which led the Hindu to originate algebra, and the Greek to originate geometry, and both to attempt elaborate scientific theories of the universe, — this same capacity revealed itself in the manner in which they deified the powers of nature. They were able to imagine the indwelling spirit of the sun or the storm without help from the conception of an individual ghost. Such being the general capacity of the people, we can readily understand how, when it came to monotheism, their most eminent thinkers should have been able to frame the conception of God acting in and through the powers of nature, without the aid of any grossly anthropomorphic symbolism. In this connection it is interesting to observe the characteristics of the idea of God as conceived by the three greatest fathers of the Greek church, Clement of Alexandria, Origen, and Athanasius. The philosophy of these profound and vigorous thinkers was in large measure derived from the Stoics. They regarded Deity as immanent in the universe, and eternally operating through natural laws. In their view God is not a localizable personality, remote from the world, and acting upon it only by means of occasional portent and prodigy; nor is the world a lifeless machine blindly working after some preordained method, and only feeling the presence of God in so far as he now and then sees fit to interfere with its normal course of procedure. On the contrary, God is the ever present life of the world; it is through him that all things exist from moment to moment, and the natural sequence of events is a perpetual revelation of the divine wisdom and goodness. In accordance with this fundamental view, Clement, for example, repudiated the Gnostic theory of the vileness of matter, condemned asceticism, and regarded the world as hallowed by the presence of indwelling Deity. Knowing no distinction "between what man discovers and what God reveals," he explained Christianity as a natural development from the earlier religious thought of mankind. It was essential to his idea of the divine perfection that the past should contain within itself all the germs of the future; and accordingly he attached but slight value to tales of miracle, and looked upon salvation as the normal ripening of the higher spiritual qualities of man "under the guidance of immanent Deity." The views of Clement's disciple Origen are much like those of his master. Athanasius ventured much farther into the bewildering regions of metaphysics. Yet in his doctrine of the Trinity, by which he overcame the visible tendency toward polytheism in the theories of Arius, and averted the threatened danger of a compromise between Christianity and Paganism, he proceeded upon the lines which Clement had marked out. In his very suggestive work on "The Continuity of Christian Thought," Professor Alexander Allen thus sets forth the Athanasian point of view: "In the formula of Father, Son, and Holy Spirit, as three distinct and coequal members in the one divine essence, there was the recognition and the reconciliation of the philosophical schools which had divided the ancient world. In the idea of the eternal Father the

Oriental mind recognized what it liked to call the profound abyss of being, that which lies back of all phenomena, the hidden mystery which lends awe to human minds seeking to know the divine. In the doctrine of the eternal Son revealing the Father, immanent in nature and humanity as the life and light shining through all created things, the divine reason in which the human reason shares, there was the recognition of the truth after which Plato and Aristotle and the Stoics were struggling, — the tie which binds the creation to God in the closest organic relationship. In the doctrine of the Holy Spirit the church guarded against any pantheistic confusion of God with the world by upholding the life of the manifested Deity as essentially ethical or spiritual, revealing itself in humanity in its highest form, only in so far as humanity recognized its calling and through the Spirit entered into communion with the Father and the Son."

Great as was the service which these views of Athanasius rendered in the fourth century of our era, they are scarcely to be regarded as a permanent or essential feature of Christian theism. The metaphysic in which they are couched is alien to the metaphysic of our time, yet through this vast difference it is all the more instructive to note how closely Athanasius approaches the confines of modern scientific thought, simply through his fundamental conception of God as the indwelling life of the universe. We shall be still more forcibly struck with this similarity when we come to consider the character impressed upon our idea of God by the modern doctrine of evolution.

VI

THE IDEA OF GOD AS REMOTE FROM THE WORLD

BUT this Greek conception of divine immanence did not find favour with the Latin-speaking world. There a very different notion prevailed, the origin of which may be traced to the mental habits attending the primitive ancestor-worship. Out of materials furnished by the ghost-world a crude kind of monotheism could be reached by simply carrying back the thought to a single ghost-deity as the original ancestor of all the others. Some barbarous races have gone as far as this, as for example the Zulus, who have developed the doctrine of divine ancestors so far as to recognize a first ancestor, the Great Father, Unkulunkulu, who created the world.[1] The kind of theism reached by this process of thought differs essentially from the theism reached through the medium of nature-worship. For whereas in the latter case the god of the sky or the sea is regarded as a mysterious spirit acting in and through the phenomena, in the former case the phenomena are regarded as coerced into activity by some power existing outside of them, and this power is conceived as manlike in the crudest sense, having been originally thought of as the ghost of some man who once lived upon the earth. In the monotheism which is reached by thinking along these lines of inference, the universe is conceived as an inert lifeless machine, impelled by blind forces which have been set acting from without; and God is conceived as existing apart from the world in solitary inaccessible majesty, — " an absentee God," as Carlyle says, " sitting idle ever since the first Sabbath, at the outside of his universe, and 'seeing it go.'" This conception demands less of the intellect than the conception of God as immanent in the universe. It requires less grasp of mind and less width of experience, and it has accordingly been much the more common conception. The idea of the indwelling God is an attempt to reach out toward the reality, and as such it taxes the powers of the finite mind. The idea of God external to the universe is a symbol which in no wise approaches the reality, and for that very reason it does not tax the mental powers; there is an aspect of finality about it, in which the ordinary mind rests content and complains of whatever seeks to disturb its repose.

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[1] *Myths and Myth-Makers*, vii.

I must not be understood as ignoring the fact that this lower species of theism has been entertained by some of the loftiest minds of our race, both in ancient and in modern times. When once such an ever present conception as the idea of God has become intertwined with the whole body of the thoughts of mankind, it is very difficult for the most powerful and subtle intelligence to change the form it has taken. It has become so far organized into the texture of the mind that it abides there unconsciously, like our fundamental axioms about number and magnitude; it sways our thought hither and thither without our knowing it. The two forms of theism here contrasted have slowly grown up under the myriad unassignable influences that in antiquity caused nature-worship to predominate among some people and ancestor-worship among others; they have coloured all the philosophizing that has been done for more than twenty centuries; and it is seldom that a thinker educated under the one form ever comes to adopt the other and habitually employ it, save under the mighty influence of modern science, the tendency of which, as we shall presently see, is all in one direction.

Among ancient thinkers the view of Deity as remote from the world prevailed with the followers of Epikuros, who held that the immortal gods could not be supposed to trouble themselves about the paltry affairs of men, but lived a blessed life of their own, undisturbed in the far-off empyrean. This left the world quite under the sway of blind forces, and thus we find it depicted in the marvellous poem of Lucretius, one of the loftiest monuments of Latin genius. It is to all appearance an atheistic world, albeit the author was perhaps more profoundly religious in spirit than any other Roman that ever lived, save Augustine; yet to his immediate scientific purpose this atheism was no drawback. When we are investigating natural phenomena, with intent to explain them scientifically, our proper task is simply to ascertain the physical conditions under which they occur, and the less we meddle with metaphysics or theology the better. As Laplace said, the mathematician, in solving his equations, does not need "the hypothesis of God."[1] To the scientific investigator, as such, the forces of nature are doubtless blind, like the *x* and *y* in algebra, but this is only so long as he contents himself with describing their modes of operation; when he undertakes to explain them philosophically, as we shall see, he can in no wise dispense with his theistic hypothesis. The Lucretian philosophy, therefore, admirable as a scientific coördination of such facts about the physical universe as were then known, goes but very little way as a philosophy. It is interesting to note that this atheism followed directly from that species of theism which placed God outside of his universe. We shall find the case of modern atheism to be quite similar. As soon as this crude and misleading conception of God is refuted, as the whole progress of scientific knowledge tends to refute it, the modern atheist or positivist falls back upon his universe of blind forces and contents himself with it, while zealously shouting from the housetops that this is the whole story.

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[1] *Outlines of Cosmic Philosophy*, part iii. ch. ii.

To one familiar with Christian ideas, the notion that Man is too insignificant a creature to be worth the notice of Deity seems at once pathetic and grotesque. In the view of Plato, by which all Christendom has been powerfully influenced, there is profound pathos. The wickedness and misery of the world wrought so strongly upon Plato's keen sympathies and delicate moral sense that he came to conclusions almost as gloomy as those of the Buddhist who regards existence as an evil. In the Timaios he depicts the material world as essentially vile; he is unable to think of the pure and holy Deity as manifested in it, and he accordingly separates the Creator from his creation by the whole breadth of infinitude. This view passed on to the Gnostics, for whom the puzzling problem of philosophy was how to explain the action of the spiritual God upon the material universe. Sometimes the interval was bridged by mediating æons or emanations partly spiritual and partly material; sometimes the world was held to be the work of the devil, and in no sense divine.[1] The Greek fathers under the lead of Clement, espousing the higher theism, kept clear of this torrent of Gnostic thought; but upon Augustine it fell with full force, and he was carried away with it. In his earlier writings Augustine showed himself not incapable of comprehending the views of Clement and Athanasius; but his intense feeling of man's wickedness dragged him irresistibly in the opposite direction. In his doctrine of original sin, he represents humanity as cut off from all relationship with God, who is depicted as a crudely anthropomorphic Being far removed from the universe and accessible only through the mediating offices of an organized church. Compared with the thoughts of the Greek fathers this was a barbaric conception, but it was suited alike to the lower grade of culture in western Europe, and to the Latin political genius, which in the decline of the Empire was already occupying itself with its great and beneficent work of constructing an imperial Church. For these reasons the Augustinian theology prevailed, and in the Dark Ages which followed it became so deeply inwrought into the innermost fibres of Latin Christianity that it remains dominant to-day alike in Catholic and Protestant churches. With few exceptions every child born of Christian parents in western Europe or in America grows up with an idea of God the outlines of which were engraven upon men's minds by Augustine fifteen centuries ago. Nay, more, it is hardly too much to say that three fourths of the body of doctrine currently known as Christianity, unwarranted by Scripture and never dreamed of by Christ or his apostles, first took coherent shape in the writings of this mighty Roman, who was separated from the apostolic age by an interval of time like that which separates us from the invention of printing and the discovery of America. The idea of God upon which all this Augustinian doctrine is based is the idea of a Being actuated by human passions and purposes, localizable in space and utterly remote from that inert machine, the universe in which we live, and upon which He acts intermittently through the suspension of what are called natural laws. So deeply has this conception penetrated the thought of Christendom that we continually find it at the bottom of the speculations and arguments of men who would warmly repudiate it as thus stated in its naked outlines. It dominates the reasonings alike of believers and sceptics, of theists and atheists; it underlies at once the objections raised by orthodoxy against each new step in science and the assaults made by materialism upon every religious conception of the world; and thus it is chiefly responsible for that complicated misunderstanding which, by a lamentable confusion of thought, is commonly called "the conflict between religion and science."

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[1] *The Unseen World, and other Essays*, iv.

VII

CONFLICT BETWEEN THE TWO IDEAS, COMMONLY MISUNDERSTOOD AS A CONFLICT BETWEEN RELIGION AND SCIENCE

IN illustration of the mischief that has been wrought by the Augustinian conception of Deity, we may cite the theological objections urged against the Newtonian theory of gravitation and the Darwinian theory of natural selection. Leibnitz, who as a mathematician but little inferior to Newton himself might have been expected to be easily convinced of the truth of the theory of gravitation, was nevertheless deterred by theological scruples from accepting it. It appeared to him that it substituted the action of physical forces for the direct action of the Deity. Now the fallacy of this argument of Leibnitz is easy to detect. It lies in a metaphysical misconception of the meaning of the word "force." "Force" is implicitly regarded as a sort of entity or dæmon which has a mode of action distinguishable from that of Deity; otherwise it is meaningless to speak of substituting the one for the other. But such a personification of " force " is a remnant of barbaric thought, in no wise sanctioned by physical science. When astronomy speaks of two planets as attracting each other with a " force " which varies directly as their masses and inversely as the squares of their distances apart, it simply uses the phrase as a convenient metaphor by which to describe the manner in which the observed movements of the two bodies occur. It explains that in presence of each other the two bodies are observed to change their positions in a certain specified way, and this is all that it means. This is all that a strictly scientific hypothesis can possibly allege, and this is all that observation can possibly prove. Whatever goes beyond this and imagines or asserts a kind of " pull " between the two bodies, is not science, but metaphysics. An atheistic metaphysics may imagine such a " pull," and may interpret it as the action of something that is not Deity, but such a conclusion can find no support in the scientific theorem, which is simply a generalized description of phenomena. The general considerations upon which the belief in the existence and direct action of Deity is otherwise founded are in no wise disturbed by the establishment of any such scientific theorem. We are still perfectly free to maintain that it is the direct action of Deity which is manifested in the planetary movements ; having done nothing more with our Newtonian hypothesis than to construct a happy formula for expressing the mode or order of the manifestation. We may have learned something new concerning the manner of divine action; we certainly have not "substituted" any other kind of action for it. And what is thus obvious in this simple astronomical example is equally true in principle in every case whatever in which one set of phenomena is interpreted by reference to another set. In no case whatever can science use the words "force" or "cause" except as metaphorically descriptive of some observed or observable sequence of phenomena. And consequently at no imaginable future time, so long as the essential conditions of human thinking are maintained, can science even attempt to substitute the action of any other power for the direct action of Deity. The theological objection urged by Leibnitz against Newton was repeated word for word by Agassiz in his comments upon Darwin. He regarded it as a fatal objection to the Darwinian theory that it appeared to substitute the action of physical forces for the creative action of Deity. The fallacy here is precisely the same as in Leibnitz's argument. Mr. Darwin has convinced us that the existence of highly complicated organisms is the result of an infinitely diversified aggregate of circumstances so minute as severally to seem trivial or accidental; yet the consistent theist will always occupy an impregnable position in maintaining that the entire series in each and every one of its incidents is an immediate manifestation of the creative action of God.

In this connection it is worth while to state explicitly what is the true province of scientific explanation. Is it not obvious that since a philosophical theism must regard divine power as the immediate source of all phenomena alike, therefore science cannot properly explain any particular group of phenomena by a direct reference to the action of Deity? Such a reference is not an explanation, since it adds nothing to our previous knowledge either of the phenomena or of the manner of divine action. The business of science is simply to ascertain in what manner phenomena coexist with each other or follow each other, and the only kind of explanation with which it can properly deal is that which refers one set of phenomena to another set. In pursuing this, its legitimate business, science does not touch on the province of theology in any way, and there is no conceivable occasion for any conflict between the two. From this and the previous considerations taken together it follows not only that such explanations as are contained in the Newtonian and Darwinian theories are entirely consistent with theism, but also that they are the only kind of explanations with which science can properly concern itself at all. To say that complex organisms were directly created by the Deity is to make an assertion which, however true in a theistic sense, is utterly barren. It is of no profit to theism, which must be taken for granted before the assertion can be made; and it is of no profit to science, which must still ask its question "How?"[1]

We are now prepared to see that the theological objection urged against the Newtonian and Darwinian theories has its roots in that imperfect kind of theism which Augustine did so much to fasten upon the western world. Obviously if Leibnitz and Agassiz had been educated in that higher theism shared by Clement and Athanasius in ancient times, with Spinoza and Goethe in later days, — if they had been accustomed to conceive of God as immanent in the universe and eternally creative, — then the argument which they urged with so much feeling would never have occurred to them. By no possibility could such an argument have entered their minds. To conceive of "physical forces" as powers of which the action could in any wise be "substituted" for the action of Deity would in such case have been absolutely impossible.

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[1] *Darwinism, and other Essays*, i.; *Outlines of Cosmic Philosophy*, part ii. ch. xx.

Such a conception involves the idea of God as remote from the world and acting upon it from outside. The whole notion of what theological writers are fond of calling "secondary causes" involves such an idea of God. The higher or Athanasian theism knows nothing of secondary causes in a world where every event flows directly from the eternal First Cause. It knows nothing of physical forces save as immediate manifestations of the omnipresent creative power of God. In the personification of physical forces, and the implied contrast between their action and that of Deity, there is something very like a survival of the habits of thought which characterized ancient polytheism. What are these personified forces but little gods who are supposed to be invading the sacred domain of the ruler Zeus? When one speaks of substituting the action of Gravitation for the direct action of Deity, does there not hover somewhere in the dim background of the conception a vague spectre of Gravitation in the guise of a rebellious Titan? Doubtless it would not be easy to bring any one to acknowledge such a charge, but the unseen and unacknowledged part of a fallacy is just that which is most persistent and mischievous. It is not so many generations, after all, since our ancestors were barbarians and polytheists; and fragments of their barbaric thinking are continually intruding unawares into the midst of our lately acquired scientific culture. In most philosophical discussions a great deal of loose phraseology is used, in order to find the proper connotations of which we must go back to primitive and untutored ages. Such is eminently the case with the phrases in which the forces of nature are personified and described as something else than manifestations of omnipresent Deity.

This subject is of such immense importance that I must illustrate it from yet another point of view. We must observe the manner in which, along with the progress of scientific discovery, theological arguments have come to be permeated by the strange assumption that the greater part of the universe is godless. Here again we must go back for a moment to the primeval world and observe how behind every physical phenomenon there were supposed to be quasi-human passions and a quasi-human will. Now the phenomena which were first arranged and systematized in men's thoughts, and thus made the subject of something like scientific generalization, were the simplest, the most accessible, and the most manageable phenomena; and from these the conception of a quasi-human will soonest faded away. There are savages who believe that hatchets and kettles have souls, but men unquestionably outgrew such a belief as this long before they outgrew the belief that there are ghost-like deities in the tempest, or in the sun and moon. After many ages of culture, men ceased to regard the familiar and regularly recurring phenomena of nature as immediate results of volition, and reserved this primeval explanation for unusual or terrible phenomena, such as comets and eclipses, or famines and plagues. As the result of these habits of thought, in course of time, Nature seemed to be divided into two antithetical provinces. On the one hand, there were the phenomena that occurred with a simple regularity which seemed to exclude the idea of capricious volition ; and these were supposed to constitute the realm of natural law. On the other hand, there were the complex and irregular phenomena in which the presence of law could not so easily be detected ; and these were supposed to constitute the realm of immediate divine action. This antithesis has forever haunted the minds of men imbued with the lower or Augustinian theism ; and such have made up the larger part of the Christian world. It has tended to make the theologians hostile to science and the men of science hostile to theology. For as scientific generalization has steadily extended the region of natural law, the region which theology has assigned to divine action has steadily diminished. Every discovery in science has stripped off territory from the latter province and added it to the former.

Every such discovery has accordingly been promulgated and established in the teeth of bitter and violent opposition on the part of theologians. A desperate fight it has been for some centuries, in which science has won every disputed position, while theology, untaught by perennial defeat, still valiantly defends the little corner that is left it. Still as of old the ordinary theologian rests his case upon the assumption of disorder, caprice, and miraculous interference with the course of nature. He naïvely asks, "If plants and animals have been naturally originated, if the world as a whole has been evolved and not manufactured, and if human actions conform to law, what is there left for God to do? If not formally repudiated, is he not thrust back into the past eternity, as an ultimate source of things, which is postulated for form's sake, but might as well, for all practical purposes, be omitted?"[1]

The scientific inquirer may reply that the difficulty is one which theology has created for itself. It is certainly not science that has relegated the creative activity of God to some nameless moment in the bygone eternity and left him without occupation in the present world. It is not science that is responsible for the mischievous distinction between divine action and natural law. That distinction is historically derived from a loose habit of philosophizing characteristic of ignorant ages, and was bequeathed to modern times by the theology of the Latin church. Small blame to the atheist who, starting upon such a basis, thinks he can interpret the universe without the idea of God! He is but doing as well as he knows how, with the materials given him. One has only, however, to adopt the higher theism of Clement and Athanasius, and this alleged antagonism between science and theology, by which so many hearts have been saddened, so many minds darkened, vanishes at once and forever. "Once really adopt the conception of an ever present God, without whom not a sparrow falls to the ground, and it becomes self-evident that the law of gravitation is but an expression of a particular mode of divine action. And what is thus true of one law is true of all laws."[1] The thinker in whose mind divine action is thus identified with orderly action, and to whom a really irregular phenomenon would seem like a manifestation of sheer diabolism, foresees in every possible extension of knowledge a fresh confirmation of his faith in God. From his point of view there can be no antagonism between our duty as inquirers and our duty as worshippers. To him no part of the universe is godless. In the swaying to and fro of molecules and the ceaseless pulsations of ether, in the secular shiftings of planetary orbits, in the busy work of frost and raindrop, in the mysterious sprouting of the seed, in the everlasting tale of death and life renewed, in the dawning of the babe's intelligence, in the varied deeds of men from age to age, he finds that which awakens the soul to reverential awe; and each act of scientific explanation but reveals an opening through which shines the glory of the Eternal Majesty.

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[1] *Outlines of Cosmic Philosophy*, part iii. ch. iii.

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[1] *Outlines of Cosmic Philosophy*, part iii. ch. iii.

VIII

ANTHROPOMORPHIC CONCEPTIONS OF GOD

BETWEEN the two ideas of God which we have exhibited in such striking contrast, there is nevertheless one point of resemblance; and this point is fundamental, since it is the point in virtue of which both are entitled to be called theistic ideas. In both there is presumed to be a likeness of some sort between God and Man. In both there is an element of anthropomorphism. Even upon this their common ground, however, there is a wide difference between the two conceptions. In the one the anthropomorphic element is gross, in the other it is refined and subtle. The difference is so far-reaching that some years ago I proposed to mark it by contrasting these two conceptions of God as Anthropomorphic Theism and Cosmic Theism. For the doctrine which represents God as immanent in the universe and revealing himself in the orderly succession of events, the name Cosmic Theism is eminently appropriate: but it is not intended by the antithetic nomenclature to convey the impression that in cosmic theism there is nothing anthropomorphic.[1] A theory which should regard the Human Soul as alien and isolated in the universe, without any links uniting it with the eternal source of existence, would not be theism at all. It would be Atheism, which on its metaphysical side is "the denial of anything psychical in the universe outside of human consciousness." It is far enough from any such doctrine to the cosmic theism of Clement and Origen, of Spinoza and Lessing and Schleiermacher. The difference, however, between this cosmic conception of God and the anthropomorphic conception held by Tertullian and Augustine, Calvin and Voltaire and Paley, is sufficiently great to be described as a contrast. The explanation of the difference must be sought far back in the historic genesis of the two conceptions. Cosmic theism, as we have seen, was reached through nature-worship with its notion of vast elemental spirits indwelling in physical phenomena. Anthropomorphic theism is descended from the notion of tutelar deities which was part of the primitive ancestor-worship. In the process by which men attained to cosmic theism, physical generalization was the chief agency at work; but into anthropomorphic theism, as we have seen, there entered conceptions derived from men's political thinking. For such a people as the Romans, who could deify Imperator Augustus in just the same way that the Japanese have deified their Mikado, it was natural and easy to conceive of God as a monarch enthroned in the heavens and surrounded by a court of ministering angels. Such was the popular conception in the early ages of Christianity, and such it has doubtless remained with the mass of uninstructed people even to this day. The very grotesqueness of the idea, as it appears to the mind of a philosopher, is an index of the ease with which it satisfies the mind of an uneducated man. Many persons, no doubt, have entertained this idea of God without ever giving it very definite shape, and many have recognized it as in great measure symbolic: yet nothing can be more certain than that untold thousands have conceived it in its full intensity of anthropomorphism. Alike in sermons and theological treatises, in stately poetry and in every-day talk, the Deity has been depicted as pleased or angry, as repenting of his own acts, as soothed by adulation and quick to wreak vengeance upon silly people for blasphemous remarks. In those curious bills of expenses for the mediæval miracle-plays, along with charges of twopence for keeping up a "fyre at hell mouthe," we find such items as a shilling for a purple coat for

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[1] *Outlines of Cosmic Philosophy*, part i. ch. vii.; part iii. ch. iv.

God. In one of these plays an angel who has just witnessed the crucifixion comes rushing into Heaven, crying, "Wake up, almighty Father! Here are those beggarly Jews killing your son, and you asleep here like a drunkard!" "Devil take me if I knew anything about it!" is the drowsy reply. Not the slightest irreverence was intended in these miracle-plays, which were the only dramatic performances tolerated by the mediæval church, for the sake of their wholesome educational influence upon the common people. In the light of such facts, one sees that the representations of the Deity as an old man of august presence, with flowing hair and beard, by the early modern painters, must have meant to all save the highest minds much more than a mere symbol. Until one's thoughts have become accustomed to range far and wide over the universe it is doubtless impossible to frame a conception of Deity that is not grossly anthropomorphic. I remember distinctly the conception which I had formed when five years of age. I imagined a narrow office just over the zenith, with a tall standing-desk running lengthwise, upon which lay several open ledgers bound in coarse leather. There was no roof over this office, and the walls rose scarcely five feet from the floor, so that a person standing at the desk could look out upon the whole world. There were two persons at the desk, and one of them

— a tall, slender man, of aquiline features, wearing spectacles, with a pen in his hand and another behind his ear — was God. The other, whose appearance I do not distinctly recall, was an attendant angel. Both were diligently watching the deeds of men and recording them in the ledgers. To my infant mind this picture was not grotesque, but ineffably solemn, and the fact that all my words and acts were thus written down, to confront me at the day of judgment, seemed naturally a matter of grave concern.

If we could cross-question all the men and women we know, and still more all the children, we should probably find that, even in this enlightened age, the conceptions of Deity current throughout the civilized world contain much that is in the crudest sense anthropomorphic. Such, at any rate, seems to be the character of the conceptions with which we start in life. With those whose studies lead them to ponder upon the subject in the light of enlarged experience, these conceptions become greatly modified. They lose their anthropomorphic definiteness, they grow vague by reason of their expansion, they become recognized as largely symbolic, but they never quite lose all traces of their primitive form. Indeed, as I said a moment ago, they cannot do so. The utter demolition of anthropomorphism would be the demolition of theism. We have now to see what traces of its primitive form the idea of God can retain, in the light of our modern knowledge of the universe.

IX

THE ARGUMENT FROM DESIGN

THE most highly refined and scientific form of anthropomorphic theism is that which we are accustomed to associate with Paley and the authors of the Bridgewater treatises. It is not peculiar to Christianity, since it has been held by pagans and unbelievers as firmly as by the devoutest members of the church. The argument from design is as old as Sokrates, and was relied on by Voltaire and the English deists of the eighteenth century no less than by Dr. Chalmers and Sir Charles Bell. Upon this theory the universe is supposed to have been created by a Being possessed of intelligence and volition essentially similar to the intelligence and volition of Man. This Being is actuated by a desire for the good of his creatures, and in pursuance thereof entertains purposes and adapts means to ends with consummate ingenuity. The process by which the world was created was analogous to manufacture, as being the work of an intelligent artist operating upon unintelligent materials objectively existing. It is in accordance with this theory that books on natural theology, as well as those text-books of science which deem it edifying to introduce theological reflections where they have no proper place, are fond of speaking of the "Divine Architect" or the "Great Designer."

This theory, which is still commonly held, was in high favour during the earlier part of the present century. In view of the great and sudden advances which physical knowledge was making, it seemed well worth while to consecrate science to the service of theology; and at the same time, in emphasizing the argument from design, theology adopted the methods of science. The attempt to discover evidences of beneficent purpose in the structure of the eye and ear, in the distribution of plants and animals over the earth's surface, in the shapes of the planetary orbits and the inclinations of their axes, or in any other of the innumerable arrangements of nature, was an attempt at true induction; and high praise is due to the able men who have devoted their energies to reinforcing the argument. By far the greater part of the evidence was naturally drawn from the organic world, which began to be comprehensively studied in the mutual relations of all its parts in the time of Lamarck and Cuvier. The organic world is full of unspeakably beautiful and wonderful adaptations between organisms and their environments, as well as between the various parts of the same organism. The unmistakable end of these adaptations is the welfare of the animal or plant; they conduce to length and completeness of life, to the permanence and prosperity of the species. For some time, therefore, the arguments of natural theology seemed to be victorious along the whole line. The same kind of reasoning was pushed farther and farther to explain the classification and morphology of plants and animals; until the climax was reached in Agassiz's remarkable "Essay on Classification," published in 1859, in which every organic form was not only regarded as a concrete thought of the Creator interpretable by the human mind, but this kind of explanation was expressly urged as a substitute for inquiries into the physical causes whereby such forms might have been originated.

In its best days, however, there was a serious weakness in the argument from design, which was ably pointed out by Mr. Mill, in an essay wherein he accords much more weight to the general argument than could now by any possibility be granted it. Its fault was the familiar logical weakness of proving too much. The very success of the argument in showing the world to have been the work of an intelligent Designer made it impossible to suppose that Creator to be at once omnipotent and absolutely benevolent. For nothing can be clearer than that Nature is full of cruelty and maladaptation. In every part of the animal world we find implements of torture surpassing in devilish ingenuity anything that was ever seen in the dungeons of the Inquisition. We are introduced to a scene of incessant and universal strife, of which it is not apparent on the surface that the outcome is the good or the happiness of anything that is sentient. In pre-Darwinian times, before we had gone below the surface, no such outcome was discernible. Often, indeed, we find the higher life wantonly sacrificed to the lower, as instanced by the myriads of parasites apparently created for no other purpose than to prey upon creatures better than themselves. Such considerations bring up, with renewed emphasis, the everlasting problem of the origin of evil. If the Creator of such a world is omnipotent he cannot be actuated solely by a desire for the welfare of his creatures, but must have other ends in view to which this is in some measure subordinated. Or if he is absolutely benevolent, then he cannot be omnipotent, but there is something in the nature of things which sets limits to his creative power. This dilemma is as old as human thinking, and it still remains a stumbling-block in the way of any theory of the universe that can possibly be devised. But it is an obstacle especially formidable to any kind of anthropomorphic theism. For the only avenue of escape is the assumption of an inscrutable mystery which would contain the solution of the problem if the human intellect could only penetrate so far; and the more closely we invite a comparison between divine and human methods of working, the more do we close up that only outlet.

The practical solution oftenest adopted has been that which sacrifices the Creator's omnipotence in favour of his benevolence. In the noblest of the purely Aryan religions — that of which the sacred literature is contained in the Zendavesta — the evil spirit Ahriman exists independently of the will of the good Ormuzd, and is accountable for all the sin in the world, but in the fulness of time he is to be bound in chains and shorn of his power for mischief.[1] This theory has passed into Christendom in the form of Manichæism; but its essential features have been adopted by orthodox Christianity, which at the same time has tried to grasp the other horn of the dilemma and save the omnipotence of the Deity by paying him what Mr. Mill calls the doubtful compliment of making him the creator of the devil. By this device the essential polytheism of the conception is thinly veiled. The confusion of thought has been persistently blinked by the popular mind; but among the profoundest thinkers of the Aryan race there have been two who have explicitly adopted the solution which limits the Creator's power. One of these was Plato, who held that God's perfect goodness has been partially thwarted by the intractableness of the materials he has had to work with. This theory was carried to extremes by those Gnostics who believed that God's work consisted in redeeming a world originally created by the devil, and in orthodox Christianity it gave rise to the Augustinian doctrine of total depravity, and the " philosophy of the plan of salvation " founded thereon. The other great thinker who adopted a similar solution was Leibnitz. In his famous theory of optimism the world is by no means represented as perfect; it is only the best of all possible worlds, the best the Creator could make out of the materials at hand. In recent times Mr. Mill shows a marked preference for this view, and one of the foremost religious teachers now living, Dr. Martineau, falls into a parallel line of thinking in his suggestion that the primary qualities of matter constitute a " datum objective to God," who, " in shaping the orbits out of immensity, and determining seasons out of eternity, could but follow the laws of curvature, measure, and proportion."[1]

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[1] *Myths and Myth-Makers*, iv.

But indeed it is not necessary to refer to the problem of evil in order to show that the argument from design cannot prove the existence of an omnipotent and benevolent Designer. It is not omnipotence that contrives and plans and adapts means to ends. These are the methods of finite intelligence; they imply the overcoming of obstacles; and to ascribe them to omnipotence is to combine words that severally possess meanings into a phrase that has no meaning. "God said, Let there be light: and there was light." In this noble description of creative omnipotence one would search in vain for any hint of contrivance. The most the argument from design could legitimately hope to accomplish was to make it seem probable that the universe was wrought into its present shape by an intelligent and benevolent Being immeasurably superior to Man, but far from infinite in power and resources. Such an argument hardly rises to the level of true theism.[1]

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[1] *Outlines of Cosmic Philosophy*, part iii. ch. ii.

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[1] *Outlines of Cosmic Philosophy*, part iii. ch. ii.

X

SIMILE OF THE WATCH REPLACED BY SIMILE OF THE FLOWER

IT was in its own chosen stronghold that this once famous argument was destined to meet its doom. It was in the adaptations of the organic world, in the manifold harmonies between living creatures and surrounding circumstances, that it had seemed to find its chief support; and now came the Darwinian theory of natural selection, and in the twinkling of an eye knocked all this support from under it. It is not that the organism and its environment had been adapted to each other by an exercise of creative intelligence, but it is that the organism is necessarily fitted to the environment because in the perennial slaughter that has gone on from the beginning only the fittest have survived. Or, as it has been otherwise expressed, "the earth is suited to its inhabitants because it has produced them, and only such as suit it live." In the struggle for existence no individual peculiarity, however slight, that tends to the preservation of life is neglected. It is unerringly seized upon and propagated by natural selection, and from the cumulative action of such slight causes have come the beautiful adaptations of which the organic world is full. The demonstration of this point, through the labours of a whole generation of naturalists, has been one of the most notable achievements of modern science, and to the theistic arguments of Paley and the Bridgewater treatises it has dealt destruction.

But the Darwinian theory of natural selection does not stand alone. It is part of a greater whole. It is the most conspicuous portion of that doctrine of evolution in which all the results hitherto attained by the great modern scientific movement are codified, and which Herbert Spencer had already begun to set forth in its main outlines before the Darwinian theory had been made known to the world. This doctrine of evolution so far extends the range of our vision through past and future time as entirely to alter our conception of the universe. Our grandfathers, in common with all preceding generations of men, could and did suppose that at some particular moment in the past eternity the world was created in very much the shape which it has at present. But our modern knowledge does not allow us to suppose anything of the sort. We can carry back our thoughts through a long succession of great epochs, some of them many millions of years in duration, in each of which the innumerable forms of life that covered the earth were very different from what they were in all the others, and in even the nearest of which they were notably different from what they are now. We can go back still farther to the eras when the earth was a whirling ball of vapour, or when it formed an equatorial belt upon a sun two hundred million miles in diameter, or when the sun itself was but a giant nebula from which as yet no planet had been born. And through all the vast sweep of time, from the simple primeval vapour down to the multifarious world we know to-day, we see the various forms of Nature coming into existence one after the other in accordance with laws of which we are already beginning to trace the character and scope. Paley's simile of the watch is no longer applicable to such a world as this. It must be replaced by the simile of the flower. The universe is not a machine, but an organism, with an indwelling principle of life. It was not made, but it has grown.

That such a change in our conception of the universe marks the greatest revolution that has ever taken place in human thinking need scarcely be said. But even in this statement we have not quite revealed the depth of the change. Not only has modern science made it clear that the varied forms of Nature which make up the universe have arisen through a process of evolution, but it has also made it clear that what we call the laws of Nature have been evolved through the self-same process. The axiom of the persistence of force, upon which all modern science has come to rest, involves as a necessary corollary the persistence of the relations between forces ; so that, starting with the persistence of force and the primary qualities of matter, it can be shown that all those uniformities of coexistence and succession which we call natural laws have arisen one after the other in connection with the forms which have afforded the occasions for their manifestation. The all-pervading harmony of Nature is thus itself a natural product, and the last inch of ground is cut away from under the theologians who suppose the universe to have come into existence through a supernatural process of manufacture at the hands of a Creator outside of itself.

XI

THE CRAVING FOR A FINAL CAUSE

IT appears, then, that the idea of God as remote from the world is not likely to survive the revolution in thought which the rapid increase of modern knowledge has inaugurated. The knell of anthropomorphic or Augustinian theism has already sounded. This conclusion need not, however, disturb us when we consider how imperfect a form of theism this is which mankind is now outgrowing. To get rid of the appearance of antagonism between science and religion will of itself be one of the greatest benefits ever conferred upon the human race. It will forward science and purify religion, and it will go far toward increasing kindness and mutual helpfulness among men. Since such happy results are likely to follow the general adoption of the cosmic or Athanasian form of theism, in place of the other form, it becomes us to observe more specifically the manner in which this higher theism stands related to our modern knowledge.

To every form of theism, as I have already urged, an anthropomorphic element is indispensable. It is quite true, on the one hand, that to ascribe what we know as human personality to the infinite Deity straightway lands us in a contradiction, since personality without limits is inconceivable. But on the other hand, it is no less true that the total elimination of anthropomorphism from the idea of God abolishes the idea itself. This difficulty need not dishearten us, for it is no more than we must expect to encounter on the threshold of such a problem as the one before us. We do not approach the question in the spirit of those natural theologians who were so ready with their explanations of the divine purposes. We are aware that "we see as through a glass darkly," and we do not expect to "think God's thoughts after him" save in the crudest symbolic fashion. In dealing with the Infinite we are confessedly treating of that which transcends our powers of conception. Our ability to frame ideas is strictly limited by experience, and our experience does not furnish the materials for the idea of a personality which is not narrowly hemmed in by the inexorable barriers of circumstance. We therefore cannot conceive such an idea. But it does not follow that there is no reality answering to what such an idea would be if it could be conceived. The test of inconceivability is only applicable to the world of phenomena from which our experience is gathered. It fails when applied to that which lies behind phenomena. I do not hold for this reason that we are justified in using such an expression as "infinite personality" in a philosophical inquiry where clearness of thought and speech is above all things desirable. But I do hold, most emphatically, that we are not debarred from ascribing a quasi-psychical nature to the Deity simply because we can frame no proper conception of such a nature as absolute and infinite.

The point is of vital importance to theism. As Kant has well said, "the conception of God involves not merely a blindly operating Nature as the eternal root of things, but a Supreme Being that shall be the author of all things by free and understanding action; and it is this conception which alone has any interest for us." It will be observed that Kant says nothing here about "contrivance." By the phrase "free and understanding action" he doubtless means much the same that is here meant by ascribing to God a quasi-psychical nature. And thus alone, he says, can we feel any interest in theism. The thought goes deep, yet is plain enough to every one. The teleological instinct in Man cannot be suppressed or ignored. The human soul shrinks from the thought that it is without kith or kin in all this wide universe. Our reason demands that there shall be a reasonableness in the constitution of things. This demand is a fact in our psychical nature as positive and irrepressible as our acceptance of geometrical axioms and our rejection of whatever controverts such axioms. No ingenuity of argument can bring us to believe that the infinite Sustainer of the universe will "put us to permanent intellectual confusion." There is in every earnest thinker a craving after a final cause; and this craving can no more be extinguished than our belief in objective reality. Nothing can persuade us that the universe is a farrago of nonsense. Our belief in what we call the evidence of our senses is less strong than our faith that in the orderly sequence of events there is a meaning which our minds could fathom were they only vast enough. Doubtless in our own age, of which it is a most healthful symptom that it questions everything, there are many who, through inability to assign the grounds for such a faith, have persuaded themselves that it must be a mere superstition which ought not to be cherished; but it is not likely that any one of these has ever really succeeded in ridding himself of it.

According to Mr. Spencer, the only ultimate test of reality is persistence, and the only measure of validity among our primary beliefs is the success with which they resist all efforts to change them. Let us see, then, how it is with the belief in the essential reasonableness of the universe. Does this belief answer to any outward reality ? Is there, in the scheme of things, aught that justifies Man in claiming kinship of any sort with the God that is immanent in the world ?

The difficulty in answering such questions has its root in the impossibility of framing a representative conception of Deity ; but it is a difficulty which may, for all practical purposes, be surmounted by the aid of a symbolic conception.

XII

SYMBOLIC CONCEPTIONS

OBSERVE the meaning of this distinction. Of any simple object which can be grasped in a single act of perception, such as a knife or a book, an egg or an orange, a circle or a triangle, you can frame a conception which almost or quite exactly *represents* the object. The picture or visual image in your mind when the orange is present to the senses is almost exactly reproduced when it is absent. The distinction between the two lies chiefly in the relative vividness of the former as contrasted with the relative faintness of the latter. But as the objects of thought increase in size and in complexity of detail, the case soon comes to be very different. You cannot frame a truly representative conception of the town in which you live, however familiar you may be with its streets and houses, its parks and trees, and the looks and demeanour of the townsmen; it is impossible to embrace so many details in a single mental picture. The mind must range to and fro among the phenomena in order to represent the town in a series of conceptions.

But practically what you have in mind when you speak of the town is a fragmentary conception in which some portion of the object is represented, while you are well aware that with sufficient pains a series of mental pictures could be formed which would approximately correspond to the object. That is to say, this fragmentary conception stands in your mind as a *symbol* of the town. To some extent the conception is representative, but to a great degree it is symbolic. With a further increase in the size and complexity of the objects of thought, our conceptions gradually lose their representative character, and at length become purely symbolic. No one can form a mental picture that answers even approximately to the earth. Even a homogeneous ball eight thousand miles in diameter is too vast an object to be conceived otherwise than symbolically, and much more is this true of the ball upon which we live, with all its endless multiformity of detail. We imagine a globe and clothe it with a few terrestrial attributes, and in our minds this fragmentary notion does duty as a symbol of the earth.

The case becomes still more striking when we have to deal with conceptions of the universe, of cosmic forces such as light and heat, or of the stupendous secular changes which modern science calls us to contemplate. Here our conceptions cannot even pretend to represent the objects; they are as purely symbolic as the algebraic equations whereby the geometer expresses the shapes of curves. Yet so long as there are means of verification at our command, we can reason as safely with these symbolic conceptions as if they were truly representative. The geometer can at any moment translate his equation into an actual curve, and thereby test the results of his reasoning; and the case is similar with the undulatory theory of light, the chemist's conception of atomicity, and other vast stretches of thought which in recent times have revolutionized our knowledge of Nature. The danger in the use of symbolic conceptions is the danger of framing illegitimate symbols that answer to nothing in heaven or earth, as has happened first and last with so many short-lived theories in science and in metaphysics. Forewarned of this danger, and therefore — I hope — forearmed against it, let us see what a scientific philosophy has to say about the Power that is manifested in and through the universe.

XIII

THE ETERNAL SOURCE OF PHENOMENA

WE have seen that before men could arrive at the idea of God, before out of the old crude and fragmentary polytheisms there could be developed a pure and coherent theism, it was necessary that physical generalization should have advanced far enough to enable them, however imperfectly, to reason about the universe as a whole. It was a faint glimpse of the unity of Nature that first led men to the conception of the unity of God, and as their knowledge of the phenomenal fact becomes clearer, so must their grasp upon the noumenal truth behind it become firmer. Now the whole tendency of modern science is to impress upon us ever more forcibly the truth that the entire knowable universe is an immense unit, animated throughout all its parts by a single principle of life. This conclusion, which was long ago borne in upon the minds of prophetic thinkers, like Spinoza and Goethe, through their keen appreciation of the significance of the physical harmonies known to them, has during the last fifty years received something like a demonstration in detail. It is since Goethe's death, for example, that it has been proved that the Newtonian law of gravitation extends to the bodies which used to be called fixed stars. That such was the case was already much more than probable, but so lately as 1835 there were to be found writers on science, such as Comte, who denied that it could ever be proved. But a still more impressive illustration of the unity of Nature is furnished by the luminiferous ether, when considered in connection with the discovery of the correlation of forces. The fathomless abysses of space can no longer be talked of as empty; they are filled with a wonderful substance, unlike any of the forms of matter which we can weigh and measure. A cosmic jelly almost infinitely hard and elastic, it offers at the same time no appreciable resistance to the movements of the heavenly bodies. It is so sensitive that a shock in any part of it causes a "tremor which is felt on the surface of countless worlds." Radiating in every direction, from millions of centric points, run shivers of undulation manifested in endless metamorphosis as heat, or light, or actinism, as magnetism or electricity. Crossing one another in every imaginable way, as if all space were crowded with a mesh-work of nerve-threads, these motions go on forever in a harmony that nothing disturbs. Thus every part of the universe shares in the life of all the other parts, as when in the solar atmosphere, pulsating at its temperature of a million degrees Fahrenheit, a slight breeze instantly sways the needles in every compass-box on the face of the earth.

Still further striking confirmation is found in the marvellous disclosures of spectrum analysis. To whatever part of the heavens we turn the telescope, armed with this new addition to our senses, we find the same chemical elements with which the present century has made us familiar upon the surface of the earth. From the distant worlds of Arcturus and the Pleiades, whence the swift ray of light takes many years to reach us, it brings the story of the hydrogen and oxygen, the vapour of iron or sodium, which set it in motion. Thus in all parts of the universe that have fallen within our ken we find a unity of chemical composition. Nebulæ, stars, and planets are all made of the same materials, and on every side we behold them in different stages of development, worlds in the making: here an irregular nebula such as our solar system once was, there a nebula whose rotation has at length wrought it into spheroidal form; here and there stars of varied colours marking different eras in chemical evolution; new planets still partly incandescent like Saturn and Jupiter, then planets like Mars and the earth, with cool atmospheres and solid continents and vast oceans of water; and lastly such bodies as the moon, vapourless, rigid, and cold in death.

Still nearer do we come toward realizing the unity of Nature when we recollect that the law of evolution is not only the same for all these various worlds, but is also the same throughout all other orders of phenomena. Not only in the development of cosmical bodies, including the earth, but also in the development of life upon the earth's surface and in the special development of those complex manifestations of life known as human societies, the most general and fundamental features of the process are the same, so that it has been found possible to express them in a single universal formula. And what is most striking of all, this notable formula, under which Herbert Spencer has succeeded in generalizing the phenomena of universal evolution, was derived from the formula under which Von Baer in 1829 first generalized the mode of development of organisms from their embryos. That a law of evolution first partially detected among the phenomena of the organic world should thereafter not only be found applicable to all other orders of phenomena, but should find in this application its first complete and coherent statement, is a fact of wondrous and startling significance. It means that the universe as a whole is thrilling in every fibre with Life, — not, indeed, life in the usual restricted sense, but life in a general sense. The distinction, once deemed absolute, between the living and the not-living is converted into a relative distinction; and Life as manifested in the organism is seen to be only a specialized form of the Universal Life.

The conception of matter as dead or inert belongs, indeed, to an order of thought that modern knowledge has entirely outgrown. If the study of physics has taught us anything, it is that nowhere in Nature is inertness or quiescence to be found. All is quivering with energy. From particle to particle without cessation the movement passes on, reappearing from moment to moment under myriad Protean forms, while the rearrangements of particles incidental to the movement constitute the qualitative differences among things. Now in the language of physics all motions of matter are manifestations of force, to which we can assign neither beginning nor end. Matter is indestructible, motion is continuous, and beneath both these universal truths lies the fundamental truth that force is persistent. The farthest reach in science that has ever been made was made when it was proved by Herbert Spencer that the law of universal evolution is a necessary consequence of the persistence of force. It has shown us that all the myriad phenomena of the universe, all its weird and subtle changes, in all their minuteness from moment to moment, in all their vastness from age to age, are the manifestations of a single animating principle that is both infinite and eternal.

By what name, then, shall we call this animating principle of the universe, this eternal source of phenomena? Using the ordinary language of physics, we have just been calling it Force, but such a term in no wise enlightens us. Taken by itself it is meaningless; it acquires its meaning only from the relations in which it is used. It is a mere symbol, like the algebraic expression which stands for a curve. Of what, then, is it the symbol?

The words which we use are so enwrapped in atmospheres of subtle associations that they are liable to sway the direction of our thoughts in ways of which we are often unconscious. It is highly desirable that physics should have a word as thoroughly abstract, as utterly emptied of all connotations of personality, as possible, so that it may be used like a mathematical symbol. Such a word is Force. But what we are now dealing with is by no means a scientific abstraction. It is the most concrete and solid of realities, the one Reality which underlies all appearances, and from the presence of which we can never escape. Suppose, then, that we translate our abstract terminology into something that is more concrete. Instead of the force which persists, let us speak of the Power which is always and everywhere manifested in phenomena. Our question, then, becomes, What is this infinite and eternal Power like? What kind of language shall we use in describing it? Can we regard it as in any wise "material," or can we speak of its universal and ceaseless activity as in any wise the working of a "blind necessity"? For here, at length, we have penetrated to the innermost kernel of the problem; and upon the answer must depend our mental attitude toward the mystery of existence.

The answer is that we cannot regard the infinite and eternal Power as in any wise "material," nor can we attribute its workings to "blind necessity." The eternal source of phenomena is the source of what we see and hear and touch; it is the source of what we call matter, but it cannot itself be material. Matter is but the generalized name we give to those modifications which we refer immediately to an unknown something outside of ourselves. It was long ago shown that all the qualities of matter are what the mind makes them, and have no existence as such apart from the mind. In the deepest sense all that we really know is mind, and as Clifford would say, what we call the material universe is simply an imperfect picture in our minds of a real universe of mind-stuff.[1] Our own mind we know directly; our neighbour's mind we know by inference; that which is external to both is a Power hidden from sense, which causes states of consciousness that are similar in both. Such states of consciousness we call material qualities, and matter is nothing but the sum of such qualities. To speak of the hidden Power itself as "material" is therefore not merely to state what is untrue, — it is to talk nonsense. We are bound to conceive of the Eternal Reality in terms of the only reality that we know, or else refrain from conceiving it under any form whatever. But the latter alternative is clearly impossible.[2] We might as well try to escape from the air in which we breathe as to expel from consciousness the Power which is manifested throughout what we call the material universe. But the only conclusion we can consistently hold is that this is the very same power "which in ourselves wells up under the form of consciousness."

In the nature-worship of primitive men, beneath all the crudities of thought by which it was overlaid and obscured, there was thus after all an essential germ of truth which modern philosophy is constrained to recognize and re-

[1] *Excursions of an Evolutionist*, xiii.

[2] *Outlines of Cosmic Philosophy*, part iii. ch. iv.

iterate. As the unity of Nature has come to be demonstrated, innumerable finite powers, once conceived as psychical and deified, have been generalized into a single infinite Power that is still thought of as psychical. From the crudest polytheism we have thus, by a slow evolution, arrived at pure monotheism, — the recognition of the eternal God indwelling in the universe, in whom we live and move and have our being.

But in thus conceiving of God as psychical, as a Being with whom the human soul in the deepest sense owns kinship, we must beware of too carelessly ascribing to Him those specialized psychical attributes characteristic of humanity, which one and all imply limitation and weakness. We must not forget the warning of the prophet Isaiah: "My thoughts are not your thoughts, neither are your ways my ways, saith the Lord. For as the heavens are higher than the earth, so are my ways higher than your ways, and my thoughts than your thoughts." Omniscience, for example, has been ascribed to God in every system of theism; yet the psychical nature to which all events, past, present, and future, can be always simultaneously present is clearly as far removed from the limited and serial psychical nature of Man as the heavens are higher than the earth. We are not so presumptuous, therefore, as to attempt, with some theologians of the anthropomorphic school, to inquire minutely into the character of the divine decrees and purposes. But our task would be ill performed were nothing more to be said about that craving after a final cause which we have seen to be an essential element in Man's religious nature. It remains to be shown that there is a reasonableness in the universe, that in the orderly sequence of events there is a meaning which appeals to our human intelligence. Without adopting Paley's method, which has been proved inadequate, we may nevertheless boldly aim at an object like that at which Paley aimed. Caution is needed, since we are dealing with a symbolic conception as to which the very point in question is whether there is any reality that answers to it. The problem is a hard one, but here we suddenly get powerful help from the doctrine of evolution, and especially from that part of it known as the Darwinian theory.

XIV

THE POWER THAT MAKES FOR RIGHTEOUSNESS

ALTHOUGH it was the Darwinian theory of natural selection which overthrew the argument from design, yet — as I have argued in another place — when thoroughly understood it will be found to replace as much teleology as it destroys.[1] Indeed, the doctrine of evolution, in all its chapters, has a certain teleological aspect, although it does not employ those methods which in the hands of the champions of final causes have been found so misleading. The doctrine of evolution does not regard any given arrangement of things as scientifically explained when it is shown to subserve some good purpose, but it seeks its explanation in such antecedent conditions as may have been competent to bring about the arrangement in question. Nevertheless, the doctrine of evolution is not only perpetually showing us the purposes which the arrangements of Nature subserve, but throughout one large section of the ground which it covers it points to a discernible dramatic tendency, a clearly marked progress of events toward a mighty goal. Now it especially concerns us to note that this large section is just the one, and the only one, which our powers of imagination are able to compass. The astronomic story of the universe is altogether too vast for us to comprehend in such wise as to tell whether it shows any dramatic tendency or not.[1] But in the story of the evolution of life upon the surface of our earth, where alone we are able to compass the phenomena, we see all things working together, through countless ages of toil and trouble, toward one glorious consummation. It is therefore a fair inference, though a bold one, that if our means of exploration were such that we could compass the story of all the systems of worlds that shine in the spacious firmament, we should be able to detect a similar meaning. At all events, the story which we can decipher is sufficiently impressive and consoling. It clothes our theistic belief with moral significance, reveals the intense and solemn reality of religion, and fills the heart with tidings of great joy.

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[1] See above, p. 80, and compare *Outlines of Cosmic Philosophy*, part iii. ch. ii.

The glorious consummation toward which organic evolution is tending is the production of the highest and most perfect psychical life. Already the germs of this conclusion existed in the Darwinian theory as originally stated, though men were for a time too busy with other aspects of the theory to pay due attention to them. In the natural selection of such individual peculiarities as conduce to the survival of the species, and in the evolution by this process of higher and higher creatures endowed with capacities for a richer and more varied life, there might have been seen a well-marked dramatic tendency, toward the *dénouement* of which every one of the myriad little acts of life and death during the entire series of geologic æons was assisting. The whole scheme was teleological, and each single act of natural selection had a teleological meaning. Herein lies the reason why the theory so quickly destroyed that of Paley. It did not merely refute it, but supplanted it with explanations which had the merit of being truly scientific, while at the same time they hit the mark at which natural theology had unsuccessfully aimed.

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[1] *Darwinism, and other Essays,* vi.

Such was the case with the Darwinian theory as first announced. But since it has been more fully studied in its application to the genesis of Man, a wonderful flood of light has been thrown upon the meaning of evolution, and there appears a reasonableness in the universe such as had not appeared before. It has been shown that the genesis of Man was due to a change in the direction of the working of natural selection, whereby psychical variations were selected to the neglect of physical variations. It has been shown that one chief result of this change was the lengthening of infancy, whereby Man appeared on the scene as a plastic creature capable of unlimited psychical progress. It has been shown that one chief result of the lengthening of infancy was the origination of the family and of human society endowed with rudimentary moral ideas and moral sentiments. It has been shown that through these coöperating processes the difference between Man and all lower creatures has come to be a difference in kind transcending all other differences; that his appearance upon the earth marked the beginning of the final stage in the process of development, the last act in the great drama of creation; and that all the remaining work of evolution must consist in the perfecting of the creature thus marvellously produced. It has been further shown that the perfecting of Man consists mainly in the ever increasing predominance of the life of the soul over the life of the body. And lastly, it has been shown that, whereas the earlier stages of human progress have been characterized by a struggle for existence like that through which all lower forms of life have been developed, nevertheless the action of natural selection upon Man is coming to an end, and his future development will be accomplished through the direct adaptation of his wonderfully plastic intelligence to the circumstances in which it is placed. Hence it has appeared that war and all forms of strife, having ceased to discharge their normal function, and having thus become unnecessary, will slowly die out;[1] that the feelings and habits adapted to ages of strife will ultimately perish from disuse; and that a stage of civilization will be reached in which human sympathy shall be all in all, and the spirit of Christ shall reign supreme throughout the length and breadth of the earth.

These conclusions, with the grounds upon which they are based, have been succinctly set forth in my little book entitled "The Destiny of Man viewed in the Light of his Origin." Startling as they may have seemed to some, they are no more so than many of the other truths which have been brought home to us during this unprecedented age. They are the fruit of a wide induction from the most vitally important facts which the doctrine of evolution has set forth; and they may fairly claim recognition as an integral body of philosophic doctrine fit to stand the test of time. Here they are summarized as the final step in my argument concerning the true nature of theism. They add new meanings to the idea of God, as it is affected by modern knowledge, while at the same time they do but give articulate voice to time-honoured truths which it was feared the scepticism of our age might have rendered dumb and powerless. For if we express in its most concentrated form the meaning of these conclusions regarding Man's origin and destiny, we find that it affords the full justification of the fundamental ideas and sentiments which have animated religion at all times. We see Man still the crown and glory of the universe and the chief object of divine care, yet still the lame and halting creature, loaded with a brute-inheritance of original sin, whose ultimate salvation is slowly to be achieved through ages of moral discipline. We see the chief agency which produced him — natural selection which always works through strife — ceasing to operate upon him, so that, until human strife shall be brought to an end, there goes on a struggle between his lower and his higher impulses, in which the higher must finally conquer. And in all this we find the strongest imaginable incentive to right living, yet one that is still the same in principle with that set forth by the great Teacher who first brought men to the knowledge of the true God.

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[1] See above, pp. 53–66; also, *American Political Ideas*, ii.

As to the conception of Deity, in the shape impressed upon it by our modern knowledge, I believe I have now said enough to show that it is no empty formula or metaphysical abstraction which we would seek to substitute for the living

God. The infinite and eternal Power that is manifested in every pulsation of the universe is none other than the living God. We may exhaust the resources of metaphysics in debating how far his nature may fitly be expressed in terms applicable to the psychical nature of Man; such vain attempts will only serve to show how we are dealing with a theme that must ever transcend our finite powers of conception. But of some things we may feel sure. Humanity is not a mere local incident in an endless and aimless series of cosmical changes. The events of the universe are not the work of chance, neither are they the outcome of blind necessity. Practically there is a purpose in the world whereof it is our highest duty to learn the lesson, however well or ill we may fare in rendering a scientific account of it. When from the dawn of life we see all things working together toward the evolution of the highest spiritual attributes of Man, we know, however the words may stumble in which we try to say it, that God is in the deepest sense a moral Being. The everlasting source of phenomena is none other than the infinite Power that makes for righteousness. Thou canst not by searching find Him out; yet put thy trust in Him, and against thee the gates of hell shall not prevail; for there is neither wisdom nor understanding nor counsel against the Eternal.

THROUGH NATURE TO GOD

Soyez comme l'oiseau posé pour un instant
Sur des rameaux trop frêles,
Qui sent ployer la branche et qui chante pourtant
Sachant qu'il a des ailes!
Victor Hugo.

TO THE BELOVED AND REVERED MEMORY OF MY FRIEND

THOMAS HENRY HUXLEY

THIS BOOK IS CONSECRATED

PREFACE

A SINGLE purpose runs throughout this little book, though different aspects of it are treated in the three several parts. The first part, "The Mystery of Evil," written soon after "The Idea of God," was designed to supply some considerations which for the sake of conciseness had been omitted from that book. Its close kinship with the second part, "The Cosmic Roots of Love and Self-Sacrifice," will be at once apparent to the reader.

That second part is, with a few slight changes, the Phi Beta Kappa oration delivered by me at Harvard University, in June, 1895. Its original title was "Ethics in the Cosmic Process," and its form of statement was partly determined by the fact that it was intended as a reply to Huxley's famous Romanes lecture delivered at the University of Oxford in 1893. Readers of "The Destiny of Man" will observe that I have here repeated a portion of the argument of that book. The detection of the part played by the lengthening of infancy in the genesis of the human race is my own especial contribution to the Doctrine of Evolution, so that I naturally feel somewhat uncertain as to how far that subject is generally understood, and how far a brief allusion to it will suffice. It therefore seemed best to recapitulate the argument while indicating its bearing upon the ethics of the Cosmic Process.

I can never cease to regret that Huxley should have passed away without seeing my argument and giving me the benefit of his comments. The subject is one of a kind which we loved to discuss on quiet Sunday evenings at his fireside in London, many years ago. I have observed on Huxley's part, not only in the Romanes lecture, but also in the charming "Prolegomena," written in 1894, a tendency to use the phrase "cosmic process" in a restricted sense as equivalent to "natural selection;" and doubtless if due allowance were made for that circumstance, the appearance of antagonism between us would be greatly diminished. In our many talks, however, I always felt that, along with abundant general sympathy, there was a discernible difference in mental attitude. Upon the proposition that "the foundation of morality is to . . . give up pretending to believe that for which there is no evidence," we were heartily agreed. But I often found myself more strongly inclined than my dear friend to ask the Tennysonian question: —

"Who forged that other influence,
That heat of inward evidence,
By which he doubts against the sense?

In the third part of the present little book, "The Everlasting Reality of Religion," my aim is to show that "that other influence," that inward conviction, the craving for a final cause, the theistic assumption, is itself one of the master facts of the universe, and as much entitled to respect as any fact in physical nature can possibly be. The argument flashed upon me about ten years ago, while reading Herbert Spencer's controversy with Frederic Harrison concerning the nature and reality of religion. Because Spencer derived historically the greater part of the modern belief in an Unseen World from the savage's primeval world of dreams and ghosts, some of his critics maintained that logical consistency required him to dismiss the modern belief as utterly false; otherwise he would be guilty of seeking to evolve truth from falsehood. By no means, replied Spencer: "Contrariwise, the ultimate form of the religious consciousness is the final development of a consciousness which at the outset contained a germ of truth obscured by multitudinous errors." This suggestion has borne fruit in the third part of the present volume, where I have introduced a wholly new line of argument to show that the Doctrine of Evolution, properly understood, does not leave the scales equally balanced between Materialism and Theism, but irredeemably discredits the former, while it places the latter upon a firmer foundation than it has ever before occupied.

My reference to the French materialism of the eighteenth century, in its contrast with the theism of Voltaire, is intended to point the stronger contrast between the feeble survivals of that materialism in our time and the unshakable theism which is in harmony with the Doctrine of Evolution. When some naturalist like Haeckel assures us that as evolutionists we are bound to believe that death ends all, it is a great mistake to hold the Doctrine of Evolution responsible for such a statement. Haeckel's opinion was never reached through a scientific study of evolution; it is nothing but an echo from the French speculation of the eighteenth century. Such a writer as La Mettrie proceeded upon the assumption that no belief concerning anything in the heavens above, or the earth beneath, or the waters under the earth, is worthy of serious consideration unless it can be demonstrated by the methods employed in physical science. Such a mental attitude was natural enough at a time when the mediæval theory of the world was falling into discredit, while astronomy and physics were winning brilliant victories through the use of new methods. It was an attitude likely to endure so long as the old-fashioned fragmentary and piecemeal habits of studying nature were persisted in; and the change did not come until the latter half of the nineteenth century.

The encyclopædic attainments of Alexander von Humboldt, for example, left him, to all intents and purposes, a materialist of the eighteenth century. But shortly before the death of that great German scholar, there appeared the English book which heralded a complete reversal of the attitude of science. The "Principles of Psychology," published in 1855 by Herbert Spencer, was the first application of the theory of evolution on a grand scale. Taken in connection with the discoveries of natural selection, of spectrum analysis, and of the mechanical equivalence between molar and molecular motions, it led the way to that sublime conception of the Unity of Nature by which the minds of scientific thinkers are now coming to be dominated. The attitude of mind which expressed itself in a great encyclopædic book without any pervading principle of unity, like Humboldt's "Kosmos," is now become what the Germans call *ein ueberwundener Standpunkt*, or something that we have passed by and left behind.

When we have once thoroughly grasped the monotheistic conception of the universe as an organic whole, animated by the omnipresent spirit of God, we have forever taken leave of that materialism to which the universe was merely an endless multitude of phenomena. We begin to catch glimpses of the meaning and dramatic purposes of things; at all events we rest assured that there really is such a meaning. Though the history of our lives, and of all life upon our planet, as written down by the unswerving finger of Nature, may exhibit all events and their final purpose in unmistakable sequence, yet to our limited vision the several fragments of the record, like the leaves of the Cumæan Sibyl, caught by the fitful breezes of circumstance and whirled wantonly hither and thither, lie in such intricate confusion that no ingenuity can enable us wholly to decipher the legend. But could we attain to a knowledge commensurate with the reality — could we penetrate the hidden depths where, according to

Dante (Paradiso, xxxiii. 85), the story of Nature, no longer scattered in truant leaves, is bound with divine love in a mystic volume, we should find therein no traces of hazard or incongruity. From man's origin we gather hints of his destiny, and the study of evolution leads our thoughts through Nature to God.

CAMBRIDGE, *March* 2, 1899.

THE MYSTERY OF EVIL

I am the Lord, and there is none else. I form the light, and create darkness; I make peace, and create evil. I the Lord do all these things. — Isaiah xlv. 6, 7.

Did not our God bring all this evil upon us? — Nehemiah xiii. 18.

Οὐκ ἔοικε δ' ἡ φύσις ἐπεισοδιώδης οὖσα ἐκ τῶν φαινομένων, ὥσπερ μοχθηρὰ τραγῳδία. — Aristotle, *Metaphysica*, xiii. 3.

I

THE SERPENT'S PROMISE TO THE WOMAN

Your eyes shall be opened, and ye shall be as gods, knowing good and evil. — GENESIS iii. 5.

THE legend in which the serpent is represented as giving this counsel to the mother of mankind occurs at the beginning of the Pentateuch in the form which that collection of writings assumed after the return of the Jews from the captivity at Babylon, and there is good reason for believing that it was first placed there at that time. Allusions to Eden in the Old Testament literature are extremely scarce,[1] and the story of Eve's temptation first assumes prominence in the writings of St. Paul. The marks of Zoroastrian thought in it have often been pointed out. This garden of Eden is a true Persian paradise, situated somewhere in that remote wonderland of Aryana Vaējo to which all Iranian tradition is so fond of pointing back. The wily serpent is a genuine Parsee serpent, and the spirit which animates him is that of the malicious and trick-some Ahriman, who takes delight in going about after the good creator Ormuzd and spoiling his handiwork. He is not yet identified with the terrible Satan, the accusing angel who finds out men's evil thoughts and deeds. He is simply a mischief-maker, and the punishment meted out to him for his mischief reminds one of many a curious passage in the beast epos of primitive peoples. As in the stories which tell why the mole is blind or why the fox has a bushy tail, the serpent's conduct is made to account for some of his peculiar attributes. As a punishment he is made to crawl upon his belly, and be forever an object of especial dread and loathing to all the children of Eve.

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[1] Isaiah li. 3; Joel ii. 3; Ezekiel xxviii. 13, xxxi. 8, 9.

What, then, is the crime for which the serpent Ahriman thus makes bitter expiation? In what way has he spoiled Ormuzd's last and most wonderful creation? He has introduced the sense of sin: the man and the woman are afraid, and hide themselves from their Lord whom they have offended. Yet he has been not altogether a deceiving serpent. In one respect he has spoken profound truth. The man and the woman have become as gods. In the Hebrew story Jehovah says, "Behold the man is become as one of us;" that is to say, one of the Elohim or heavenly host, who know the good and the evil. Man has apparently become a creature against whom precautions need to be taken. It is hinted that by eating of the other tree and acquiring immortal life he would achieve some result not in accordance with Jehovah's will, yet which it would then be too late to prevent. Accordingly, any such proceedings are forestalled by driving the man and woman from the garden, and placing sentinels there with a fiery sword which turns hither and thither to warn off all who would tread the path that leads to the tree of life. The anthropomorphism of the story is as vivid as in those Homeric scenes in which gods and men contend with one another in battle. It is plainly indicated that Jehovah's wrath is kindled at man's presumption in meddling with what belongs only to the Elohim ; man is punished for his arrogance in the same spirit as when, later on, he gives his daughters in marriage to the sons of the Elohim and brings on a deluge, or when he strives to build a tower that will reach to heaven and is visited with a confusion of tongues. So here in Eden he has come to know too much, and Ahriman's heinous crime has consisted in helping him to this interdicted knowledge.

The serpent's promise to the woman was worthy of the wisest and most astute of animals. But with yet greater subtlety he might have declared, Except ye acquire the knowledge of good and evil, ye cannot come to be as gods;

divine life can never be yours. Throughout the Christian world this legend of the lost paradise has figured as the story of the Fall of Man; and naturally, because of the theological use of it made by St. Paul, who first lifted the story into prominence in illustrating his theory of Christ as the second Adam: since by man came death into the world, by man came also the resurrection from death and from sin. That there is truth of the most vital sort in the Pauline theory is undeniable; but there are many things that will bear looking at from opposite points of view, for aspects of truth are often to be found on both sides of the shield, and there is a sense in which we may regard the loss of paradise as in itself the beginning of the Rise of Man. For this, indeed, we have already found some justification in the legend itself. It is in no spirit of paradox that I make this suggestion. The more patiently one scrutinizes the processes whereby things have come to be what they are, the more deeply is one impressed with its profound significance.

II

THE PILGRIM'S BURDEN

BUT before I can properly elucidate this view, and make clear what is meant by connecting the loss of innocence with the beginning of the Rise of Man, it is necessary to bestow a few words upon a well-worn theme, and recall to mind the helpless and hopeless bewilderment into which all theologies and all philosophies have been thrown by the problem of the existence of evil. From the ancient Greek and Hebrew thinkers who were saddened by the spectacle of wickedness insolent and unpunished, down to the aged Voltaire and the youthful Goethe who felt their theories of God's justice quite baffled by the Lisbon earthquake, or down to the atheistic pessimist of our own time who asserts that the Power which sustains the world is but a blind and terrible force without concern for man's welfare of body or of soul, — from first to last the history of philosophy teems with the mournful instances of this discouragement. In that tale of War and Peace wherein the fervid genius of Tolstoi has depicted scenes and characters of modern life with truthful grandeur like that of the ancient epic poems, when our friend, the genial and thoughtful hero of the story, stands in the public square at Moscow, uncertain of his fate, while the kindly bright-faced peasant and the eager pale young mechanic are shot dead by his side, and all for a silly suspicion on the part of Napoleon's soldiery; as he stands and sees the bodies, still warm and quivering, tossed into a trench and loose earth hastily shovelled over them, his manly heart surges in rebellion against a world in which such things can be, and a voice within him cries out, — not in the mood in which the fool crieth, but with the anguish of a tender soul wrung by the sight of stupendous iniquity, — "There is no God!" It is but the utterance of an old-world feeling, natural enough to hard-pressed and sorely tried humanity in those moments that have come to it only too often, when triumphant wrong is dreadfully real and close at hand, while anything like compensation seems shadowy and doubtful and far away.

It is this feeling that has created the belief in a devil, an adversary to the good God, an adversary hard to conquer or baffle. The feeling underlies every theological creed, and in every system of philosophy we find it lurking somewhere. In these dark regions of thought, which science has such scanty means for exploring, the statements which make up a creed are apt to be the outgrowth of such an all-pervading sentiment, while their form will be found to vary with the knowledge of nature — meagre enough at all times, and even in our boasted time — which happens to characterize the age in which they are made. Hence, well-nigh universally has philosophy proceeded upon the assumption, whether tacit or avowed, that pain and wrong are things hard to be reconciled with the theory that the world is created and ruled by a Being at once all-powerful and all-benevolent. Why does such a Being permit the misery that we behold encompassing us on every side? When we would fain believe that God is love indeed, and love creation's final law, how comes it that nature, red in tooth and claw with ravine, shrieks against our creed? If this question could be fairly answered, does it not seem as if the burden of life, which so often seems intolerable, would forthwith slip from our shoulders, and leave us, like Bunyan's pilgrim, free and bold and light-hearted to contend against all the ills of the world?

Ever since human intelligence became enlightened enough to grope for a meaning and purpose in human life, this problem of the existence of evil has been the burden of man. In the effort to throw it off, leaders of thought have had recourse to almost every imaginable device. It has usually been found necessary to represent the Creator as finite either in power or in goodness, although the limitation is seldom avowed, except by writers who have a leaning toward atheism and take a grim pleasure in pointing out flaws in the constitution of things. Among modern writers the most conspicuous instance of this temper is afforded by that much too positive philosopher Auguste Comte, who would fain have tipped the earth's axis at a different angle and altered the arrangements of nature in many fanciful ways. He was like Alphonso, the learned king of Castile, who regretted that he had not been present when the world was created, — he could have given such excellent advice!

In a very different mood the great Leibnitz, in his famous theory of optimism, argued that a perfect world is in the nature of things impossible, but that the world in which we live is the best of possible worlds. The limitation of the Creator's power is made somewhat more explicitly by Plato, who regarded the world as the imperfect realization of a Divine Idea that in itself is perfect. It is owing to the intractableness and vileness of matter that the Divine Idea finds itself so imperfectly realized. Thus the Creator's power is limited by the nature of the material out of which he makes the world. In other words, the world in which we live is the best the Creator could make out of the wretched material at his disposal. This Platonic view is closely akin to that of Leibnitz, but is expressed in such wise as to lend itself more readily to myth-making. Matter is not only considered as what Dr. Martineau would call a "datum objective to God," but it is endowed with a diabolical character of its own.

III

MANICHÆISM AND CALVINISM

IT is but a step from this to the complicated personifications of Gnosticism, with its Demiurgus, or inferior spirit that created the world. By some of the Gnostics the Creator was held to be merely an inferior emanation from God, a notion which had a powerful indirect effect upon the shaping of Christian doctrine in the second and third centuries of our era. A similar thought appears in the mournful question asked by Tennyson's Arthur: —

> "O me! for why is all around us here
> As if some lesser god had made the world
> And had not force to shape it as he would?"

But some Gnostics went so far as to hold that the world was originally created by the Devil, and is to be gradually purified and redeemed by the beneficent power of God as manifested through Jesus Christ. This notion is just the opposite to that of the Vendidad, which represents the world as coming into existence pure and perfect, only to be forthwith defiled by the trail of the serpent Ahriman. In both these opposing theories the divine power is distinctly and avowedly curtailed by the introduction of a rival power that is diabolical; upon this point Parsee and Gnostic are agreed. Distinct sources are postulated for the evil and the good. The one may be regarded as infinite in goodness, the other as infinite in badness, and the world in which we live is a product of the everlasting conflict between the two. This has been the fundamental idea in all Manichæan systems, and it is needless to say that it has always exerted a mighty influence upon Christian theology. The Christian conception of the Devil, as regards its deeper ethical aspect, has owed much to the Parsee conception of Ahriman. It can hardly be said, however, that there has been any coherent, closely reasoned, and generally accepted Christian theory of the subject. The notions just mentioned are in themselves too shadowy and vague, they bear too plainly the marks of their mythologic pedigree, to admit of being worked into such a coherent and closely reasoned theory. Christian thought has simply played fast and loose with these conceptions, speaking in one breath of divine omnipotence, and in the next alluding to the conflict between good and evil in language fraught with Manichæism.

In recent times Mr. John Stuart Mill has shown a marked preference for the Manichæan view, and has stated it with clearness and consistency, because he is not hampered by the feeling that he ought to reach one conclusion rather than another. Mr. Mill does not urge his view upon the reader, nor even defend it as his own view, but simply suggests it as perhaps the view which is for the theist most free from difficulties and contradictions. Mr. Mill does not, like the Manichæans, imagine a personified principle of evil; nor does he, like Plato, entertain a horror of what is sometimes, with amusing vehemence, stigmatized as " brute matter." He does not undertake to suggest how or why the divine power is limited; but he distinctly prefers the alternative which sacrifices the attribute of omnipotence in order to preserve in our conception of Deity the attribute of goodness. According to Mr. Mill, we may regard the all-wise and holy Deity as a creative energy that is perpetually at work in eliminating evil from the universe. His wisdom is perfect, his goodness is infinite, but his power is limited by some inexplicable viciousness in the original constitution of things which it must require a long succession of ages to overcome. In such a view Mr. Mill sees much that is ennobling. The humblest human being who resists an impulse to sin, or helps in the slightest degree to leave the world better than he found it, may actually be regarded as a participator in the creative work of God; and thus each act of human life acquires a solemn significance that is almost overwhelming to contemplate.

These suggestions of Mr. Mill are extremely interesting, because he was the last great modern thinker whose early training was not influenced by that prodigious expansion of scientific knowledge which, since the middle of the nineteenth century, has taken shape in the doctrine of evolution. This movement began early enough to determine the intellectual careers of eminent thinkers born between 1820 and 1830, such as Spencer and Huxley. Mr. Mill was a dozen years too old for this. He was born at nearly the same time as Mr. Darwin, but his mental habits were formed too soon for him to profit fully by the new movement of thought; and although his attitude toward the new ideas was hospitable, they never fructified in his mind. While his thinking has been of great value to the world, much of it belongs to an era which we have now left far behind. This is illustrated in the degree to which he was influenced by the speculations of Auguste Comte. Probably no two leaders of thought, whose dates of birth were scarcely a quarter of a century apart, were ever separated by such a stupendous gulf as that which intervenes between Auguste Comte and Herbert Spencer, and this fact may serve as an index to the rapidity of movement which has characterized the nineteenth century. Another illustration of the old-fashioned character of Mill's philosophy is to be seen in his use of Paley's argument from design in support of the belief in a beneficent Creator. Mill adopted this argument, and, as a professed free-thinker, carried it to the logical conclusion from which Paley, as a churchman, could not but shrink. This was the conclusion which I have already mentioned, that God's creative power has been limited by some inexplicable viciousness in the original constitution of things.

I feel as if one could not be too grateful to Mr. Mill for having so neatly and sharply stated, in modern language and with modern illustrations, this old conclusion, which after all is substantially that of Plato and the Gnostics. For the shock which such a clear, bold statement gives to our religious feelings is no greater than the shock with which it strikes counter to our modern scientific philosophy. Suppose we could bring back to earth a Calvinist of the seventeenth century and question him. He might well say that the God which Mr. Mill offers us, shorn of the attribute of omnipotence, is no God at all. He would say with the Hebrew prophet, that God has created the evil along with the good, and that he has done so for a purpose which human reason, could it once comprehend all the conditions of the case, would most surely approve as infinitely wise and holy. Our Calvinist would ask who is responsible for the original constitution of things if not the Creator himself, and in supposing anything essentially vicious in that constitution, have not Plato and the Gnostics and the Manichæans and Mr. Mill simply taken counsel of their ignorance? Nay, more, the Calvinist would declare that if we really understood the universe of which humanity is a part, we should find scientific justification for that supreme and victorious faith which cries, "Though he slay me, yet will I trust in him!" The man who has acquired such faith as this is the true freeman of the universe, clad in stoutest coat of mail against disaster and sophistry, — the man whom nothing can enslave, and whose guerdon is the serene happiness that can never be taken away.

IV

THE DRAMATIC UNITY OF NATURE

NOW in these strong assertions it seems to me that the Calvinist is much more nearly in accord with our modern knowledge than are Plato and Mill. It is not wise to hazard statements as to what the future may bring forth, but I do not see how the dualism implied in all these attempts to refer good and evil to different creative sources can ever be seriously maintained again. The advance of modern science carries us irresistibly to what some German philosophers call monism, but I prefer to call it monotheism. In getting rid of the Devil and regarding the universe as the multiform manifestation of a single all-pervading Deity, we become for the first time pure and uncompromising monotheists, — believers in the ever-living, unchangeable, and all-wise Heavenly Father, in whom we may declare our trust without the faintest trace of mental reservation.

If we can truly take such a position, and hold it rationally, it is the modern science so apt to be decried by the bats and owls of orthodoxy that justifies us in doing so. For what is the philosophic purport of these beautiful and sublime discoveries with which the keen insight and patient diligence of modern students of science are beginning to be rewarded? What is the lesson that is taught alike by the correlation of forces, by spectrum analysis, by the revelations of chemistry as to the subtle behaviour of molecules inaccessible to the eye of sense, by the astronomy that is beginning to sketch the physical history of countless suns in the firmament, by the palæontology which is slowly unravelling the wonders of past life upon the earth through millions of ages? What is the grand lesson that is taught by all this? It is the lesson of the unity of nature. To learn it rightly is to learn that all the things that we can see and know, in the course of our life in this world, are so intimately woven together that nothing could be left out without reducing the whole marvellous scheme to chaos. Whatever else may be true, the conviction is brought home to us that in all this endless multifariousness there is one single principle at work, that all is tending toward an end that was involved from the very beginning, if one can speak of beginnings and ends where the process is eternal. The whole universe is animated by a single principle of life, and whatever we see in it, whether to our half-trained understanding and narrow experience it may seem to be good or bad, is an indispensable part of the stupendous scheme. As Aristotle said, so long ago, in one of those characteristic flashes of insight into the heart of things in which no one has ever excelled him, in nature there is nothing that is out of place or interpolated, as in an ill-constructed drama.

To-day we can begin to realize how much was implied in this prophetic hint of Aristotle's, for we are forced to admit that whatever may be the function of evil in this world, it is unquestionably an indispensable function, and not something interpolated from without. Whatever exists is part of the dramatic whole, and this can quickly be proved. The goodness in the world — all that we love and praise and emulate — we are ready enough to admit into our scheme of things, and to rest upon it our belief in God. The misery, the pain, the wickedness, we would fain leave out. But if there were no such thing as evil, how could there be such a thing as goodness? Or to put it somewhat differently, if we had never known anything but goodness, how could we ever distinguish it from evil? How could we recognize it as good? How would its quality of goodness in any wise interest or concern us? This question goes down to the bottom of things, for it appeals to the fundamental conditions according to which conscious intelligence exists at all. Its answer will therefore be likely to help us. It will not enable us to solve the problem of evil, enshrouded as it is in a mystery impenetrable by finite intelligence, but it will help us to state the problem correctly; and surely this is no small help. In the mere work of purifying our intellectual vision there is that which heals and soothes us. To learn to see things without distortion is to prepare one's self for taking the world in the right mood, and in this we find strength and consolation.

V

WHAT CONSCIOUS LIFE IS MADE OF

TO return to our question, how could we have good without evil, we must pause for a moment and inquire into the constitution of the human mind. What we call the soul, the mind, the conscious self, is something strange and wonderful. In our ordinary efforts to conceive it, invisible and impalpable as it is, we are apt to try so strenuously to divorce it from the notion of substance that it seems ethereal, unreal, ghostlike. Yet of all realities the soul is the most solid, sound, and undeniable. Thoughts and feelings are the fundamental facts from which there is no escaping. Our whole universe, from the sands on the seashore to the flaming suns that throng the Milky Way, is built up of sights and sounds, of tastes and odours, of pleasures and pains, of sensations of motion and resistance either felt directly or inferred. This is no ghostly universe, but all intensely real as it exists in that intensest of realities, the human soul! Consciousness, the soul's fundamental fact, is the most fundamental of facts. But a truly marvellous affair is consciousness! The most general truth that we can assert with regard to it is this, that it exists only by virtue of incessant change. A state of consciousness that should continue through an appreciable interval of time without undergoing change would not be a state of consciousness. It would be unconsciousness.

This perpetual change, then, is what makes conscious life. It is only by virtue of this endless procession of fleeting phases of consciousness that the human soul exists at all. It is thus that we are made. Why we should have been made thus is a question aiming so far beyond our ken that it is idle to ask it. We might as well inquire whether Infinite Power could have made twice two equal five. We must rest content with knowing that it is thus we were created; it is thus that the human soul exists. Just as dynamic astronomy rests upon the law of gravitation, just as physics is based upon the properties of waves, so the modern science of mind has been built upon the fundamental truth that consciousness exists only by virtue of unceasing change. Our conscious life is a stream of varying psychical states which quickly follow one another in a perpetual shimmer, with never an instant of rest. The elementary psychical states, indeed, lie below consciousness, or, as we say, they are sub-conscious. We may call these primitive pulsations the psychical molecules out of which are compounded the feelings and thoughts that well up into the full stream of consciousness. Just as in chemistry we explain the qualitative differences among things as due to diversities of arrangement among compounded molecules and atoms, so in psychology we have come to see that thoughts and feelings in all their endless variety are diversely compounded of sub-conscious psychical molecules.

Musical sounds furnish us with a simple and familiar illustration of this. When the sounds of taps or blows impinge upon the ear slowly, at the rate of not more than sixteen in a second, they are cognized as separate and non-musical noises. When they pass beyond that rate of speed, they are cognized as a continuous musical tone of very low pitch ; a state of consciousness which seems simple, but which we now see is really compound. As the speed of the blows increases, further qualitative differences arise ; the musical tone rises in pitch until it becomes too acute for the ear to cognize, and thus vanishes from consciousness. But this is far from being the whole story ; for the series of blows or pulsations make not only a single vivid fundamental tone, but also a multifarious companion group of fainter overtones, and the diverse blending of these faint harmonics constitutes the whole difference in tone quality between the piano and the flute, the violin and the trumpet, or any other instruments. If you take up a violin and sound the F one octave above the treble staff, there are produced, in the course of a single second, several thousand psychical states which together make up the sensation of pitch, fifty-five times as many psychical states which together make up the sensation of tone quality, and an immense number of other psychical states which together make up the sensation of intensity. These psychical states are not, in any strict sense of the term, states of consciousness; for if they were to rise individually into consciousness, the result would be an immense multitude of sensations, and not a single apparently homogeneous sensation. There is no alternative but to conclude that in this case a seemingly simple state of consciousness is in reality compounded of an immense multitude of sub-conscious psychical changes.

Now, what is thus true in the case of musical sounds is equally true of all states of consciousness whatever, both those that we call intellectual and those that we call emotional. All are highly compounded aggregates of innumerable minute sub-conscious psychical pulsations, if we may so call them. In every stream of human consciousness that we call a soul each second of time witnesses thousands of infinitely small changes, in which one fleeting group of pulsations in the primordial mind-stuff gives place to another and a different but equally fleeting group. Each group is unlike its immediate predecessor. The absence of difference would be continuance, and continuance means stagnation, blankness, negation, death. That ceaseless flutter, in which the quintessence of conscious life consists, is kept up by the perpetual introduction of the relations of likeness and unlikeness. Each one of the infinitesimal changes is a little act of discrimination, a recognition of a unit of feeling as either like or unlike some other unit of feeling. So in these depths of the soul's life the arrangements and re-arrangements of units go on, while on the surface the results appear from moment to moment in sensations keen or dull, in perceptions clear or vague, in judgments wise or foolish, in memories gay or sad, in sordid or lofty trains of thought, in gusts of anger or thrills of love. The whole fabric of human thought and human emotion is built up out of minute sub-conscious discriminations of likenesses and unlikenesses, just as much as the material world in all its beauty is built up out of undulations among invisible molecules.

VI

WITHOUT THE ELEMENT OF ANTAGONISM THERE COULD BE NO CONSCIOUSNESS, AND THEREFORE NO WORLD

WE may now come up out of these depths, accessible only to the plummet of psychologic analysis, and move with somewhat freer gait in the region of common and familiar experiences. It is an undeniable fact that we cannot know anything whatever except as contrasted with something else. The contrast may be bold and sharp, or it may dwindle into a slight discrimination, but it must be there. If the figures on your canvas are indistinguishable from the background, there is surely no picture to be seen. Some element of unlikeness, some germ of antagonism, some chance for discrimination, is essential to every act of knowing. I might have illustrated this point concretely without all the foregoing explanation, but I have aimed at paying it the respect due to its vast importance. I have wished to show how the fact that we cannot know anything whatever except as contrasted with something else is a fact that is deeply rooted in the innermost structure of the human mind. It is not a superficial but a fundamental truth, that if there were no colour but red it would be exactly the same thing as if there were no colour at all. In a world of unqualified redness, our state of mind with regard to colour would be precisely like our state of mind in the present world with regard to the pressure of the atmosphere if we were always to stay in one place. We are always bearing up against the burden of this deep aerial ocean, nearly fifteen pounds upon every square inch of our bodies; but until we can get a chance to discriminate, as by climbing a mountain, we are quite unconscious of this heavy pressure. In the same way, if we knew but one colour we should know no colour. If our ears were to be filled with one monotonous roar of Niagara, unbroken by alien sounds, the effect upon consciousness would be absolute silence. If our palates had never come in contact with any tasteful thing save sugar, we should know no more of sweetness than of bitterness. If we had never felt physical pain, we could not recognize physical pleasure. For want of the contrasted background its pleasurableness would be non-existent. And in just the same way it follows that without knowing that which is morally evil we could not possibly recognize that which is morally good. Of these antagonist correlatives, the one is unthinkable in the absence of the other. In a sinless and painless world, human conduct might possess more outward marks of perfection than any saint ever dreamed of; but the moral element would be lacking; the goodness would have no more significance in our conscious life than that load of atmosphere which we are always carrying about with us.

We are thus brought to a striking conclusion, the essential soundness of which cannot be gainsaid. In a happy world there must be sorrow and pain, and in a moral world the knowledge of evil is indispensable. The stern necessity for this has been proved to inhere in the innermost constitution of the human soul. It is part and parcel of the universe. To him who is disposed to cavil at the world which God has in such wise created, we may fairly put the question whether the prospect of escape from its ills would ever induce him to put off this human consciousness, and accept in exchange some form of existence unknown and inconceivable! The alternative is clear: on the one hand a world with sin and suffering, on the other hand an unthinkable world in which conscious life does not involve contrast.

The profound truth of Aristotle's remark is thus more forcibly than ever brought home to us. We do not find that evil has been interpolated into the universe from without; we find that, on the contrary, it is an indispensable part of the dramatic whole. God is the creator of evil, and from the eternal scheme of things diabolism is forever excluded. Ormuzd and Ahriman have had their day and perished, along with the doctrine of special creations and other fancies of the untutored human mind. From our present standpoint we may fairly ask, What would have been the worth of that primitive innocence portrayed in the myth of the garden of Eden, had it ever been realized in the life of men? What would have been the moral value or significance of a race of human beings ignorant of sin, and doing beneficent acts with no more consciousness or volition than the deftly contrived machine that picks up raw material at one end, and turns out some finished product at the other? Clearly, for strong and resolute men and women an Eden would be but a fool's paradise. How could anything fit to be called *character* have ever been produced there? But for tasting the forbidden fruit, in what respect could man have become a being of higher order than the beasts of the field? An interesting question is this, for it leads us to consider the genesis of the idea of moral evil in man.

VII

A WORD OF CAUTION

BEFORE we enter upon this topic a word of caution may be needed. I do not wish the purpose of the foregoing questions to be misunderstood. The serial nature of human thinking and speaking makes it impossible to express one's thought on any great subject in a solid block; one must needs give it forth in consecutive fragments, so that parts of it run the risk of being lost upon the reader or hearer, while other parts are made to assume undue proportions. Moreover, there are many minds that habitually catch at the fragments of a thought, and never seize it in the block; and in such manner do strange misconceptions arise. I never could have dreamed, until taught by droll experience, that the foregoing allusions to the garden of Eden could be understood as a glorification of sin, and an invitation to my fellow-men to come forth with me and be wicked! But even so it was, on one occasion when I was trying, somewhat more scantily than here, to state the present case. In the midst of my endeavour to justify the grand spirit of faith which our fathers showed when from abysmal depths of affliction they never failed to cry that God doeth all things well, I was suddenly interrupted with queries as to just what percentage of sin and crime I regarded as needful for the moral equilibrium of the universe; how much did I propose to commit myself, how much would I advise people in general to commit, and just where would I have them stop! Others deemed it necessary to remind me that there is already too much suffering in the world, and we ought not to seek to increase it; that the difference between right and wrong is of great practical importance; and that if we try to treat evil as good we shall make good no better than evil.

When one has sufficiently recovered one's gravity, it is permissible to reply to such criticisms that the sharp antithesis between good and evil is essential to every step of my argument, which would entirely collapse if the antagonism were for one moment disregarded. The quantity of suffering in the world is unquestionably so great as to prompt us to do all in our power to diminish it; such we shall presently see must be the case in a world that proceeds through stages of evolution. When one reverently assumes that it was through some all-wise and holy purpose that sin was permitted to come into the world, it ought to be quite superfluous to add that the fulfilment of any such purpose demands that sin be not cherished, but suppressed. If one seeks, as a philosopher, to explain and justify God's wholesale use of death in the general economy of the universe, is one forsooth to be charged with praising murder as a fine art and with seeking to found a society of Thugs?

VIII

THE HERMIT AND THE ANGEL

THE simple-hearted monks of the Middle Ages understood, in their own quaint way, that God's methods of governing this universe are not always fit to be imitated by his finite creatures. In one of the old stories that furnished entertainment and instruction for the cloister it is said that a hermit and an angel once journeyed together. The angel was in human form and garb, but had told his companion the secret of his exalted rank and nature. Coming at nightfall to a humble house by the wayside, the two travellers craved shelter for the love of God. A dainty supper and a soft, warm bed were given them, and in the middle of the night the angel arose and strangled the kind host's infant son, who was quietly sleeping in his cradle. The good hermit was paralyzed with amazement and horror, but dared not speak a word. The next night the two comrades were entertained at a fine mansion in the city, where the angel stole the superb golden cup from which his host had quaffed wine at dinner. Next day, while crossing the bridge over a deep and rapid stream, a pilgrim met the travellers. "Canst thou show us, good father," said the angel, "the way to the next town?" As the pilgrim turned to point it out, this terrible being caught him by the shoulder and flung him into the river to drown. "Verily," thought the poor hermit, "it is a devil that I have here with me, and all his works are evil;" but fear held his tongue, and the twain fared on their way till the sun had set and snow began to fall, and the howling of wolves was heard in the forest hard by. Presently the bright light coming from a cheerful window gave hope of a welcome refuge; but the surly master of the house turned the travellers away from his door with curses and foul gibes. "Yonder is my pigsty for dirty vagrants like you." So they passed that night among the swine; and in the morning the angel went to the house and thanked the master for his hospitality, and gave him for a keepsake (thrifty angel!) the stolen goblet. Then did the hermit's wrath and disgust overcome his fears, and he loudly upbraided his companion. "Get thee gone, wretched spirit!" he cried. "I will have no more of thee. Thou pretendest to be a messenger from heaven, yet thou requitest good with evil, and evil with good!" Then did the angel look upon him with infinite compassion in his eyes. "Listen," said he, "short-sighted mortal. The birth of that infant son had made the father covetous, breaking God's commandments in order to heap up treasures which the boy, if he had lived, would have wasted in idle debauchery. By my act, which seemed so cruel, I saved both parent and child. The owner of the goblet had once been abstemious, but was fast becoming a sot; the loss of his cup has set him to thinking, and he will mend his ways. The poor pilgrim, unknown to himself, was about to commit a mortal sin, when I interfered and sent his unsullied soul to heaven. As for the wretch who drove God's children from his door, he is, indeed, pleased for the moment with the bauble I left in his hands; but hereafter he will burn in hell." So spoke the angel; and when he had heard these words the hermit bowed his venerable head and murmured, "Forgive me, Lord, that in my ignorance I misjudged thee."

I suspect that, with all our boasted science, there is still much wisdom for us in the humble childlike piety of the Gesta Romanorum. To say that the ways of Providence are inscrutable is still something more than an idle platitude, and there still is room for the belief that, could we raise the veil that enshrouds eternal truth, we should see that behind nature's cruelest works there are secret springs of divinest tenderness and love. In this trustful mood we may now return to the question as to the genesis of the idea of moral evil, and its close connection with man's rise from a state of primeval innocence.

IX

MAN'S RISE FROM THE INNOCENCE OF BRUTEHOOD

WE have first to note that in various ways the action of natural selection has been profoundly modified in the course of the development of mankind from a race of inferior creatures. One of the chief factors in the production of man was the change that occurred in the direction of the working of natural selection, whereby in the line of man's direct ancestry the variations in intelligence came to be seized upon, cherished, and enhanced, to the comparative neglect of variations in bodily structure. The physical differences between man and ape are less important than the physical differences between African and South American apes. The latter belong to different zoölogical families, but the former do not. Zoölogically, man is simply one genus in the old-world family of apes. Psychologically, he has travelled so far from apes that the distance is scarcely measurable. This transcendent contrast is primarily due to the change in the direction of the working of natural selection.

The consequences of this change were numerous and far-reaching. One consequence was that gradual lengthening of the plastic period of infancy which enabled man to become a progressive creature, and organized the primeval semi-human horde into definite family groups. I have elsewhere expounded this point, and it is known as my own especial contribution to the theory of evolution.

Another associated consequence, which here more closely concerns us, was the partial stoppage of the process of natural selection in remedying unfitness. A quotation from Herbert Spencer will help us to understand this partial stoppage: "As fast as the faculties are multiplied, so fast does it become possible for the several members of a species to have various kinds of superiorities over one another. While one saves its life by higher speed, another does the like by clearer vision, another by keener scent, another by quicker hearing, another by greater strength, another by unusual power of enduring cold or hunger, another by special sagacity, another by special timidity, another by special courage. . . . Now . . . each of these attributes, giving its possessor an extra chance of life, is likely to be transmitted to posterity. But" it is not nearly so likely to be increased by natural selection. For "if those members of the species which have but ordinary" or even deficient shares of some valuable attribute "nevertheless survive by virtue of other superiorities which they severally possess, then it is not easy to see how this particular attribute can be" enhanced in subsequent generations by natural selection.[1]

These considerations apply especially to the human race with its multitudinous capacities, and I can better explain the case by a crude and imperfect illustration than by a detailed and elaborate statement. If an individual antelope falls below the average of the herd in speed, he is sure to become food for lions, and thus the high average of speed in the herd is maintained by natural selection. But if an individual man becomes a drunkard, though his capabilities be ever so much curtailed by this vice, yet the variety of human faculty furnishes so many hooks with which to keep one's hold upon life that he may sin long and flagrantly without perishing; and if the drunkard survives, the action of natural selection in weeding out drunkenness is checked. There is thus a wide interval between the highest and lowest degrees of completeness in living that are compatible with maintenance of life. Mankind has so many other qualities beside the bad ones, which enable it to subsist and achieve progress in spite of them, that natural selection — which always works through death — cannot come into play.

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[1] *Biology*, i. 454.

Now it is because of this *interval* between the highest and lowest degrees of completeness of living that are compatible with the mere maintenance of life, that men can be distinguished as morally bad or morally good. In inferior animals, where there is no such interval, there is no developed morality or conscience, though in a few of the higher ones there are the germs of these things. Morality comes upon the scene when there is an alternative offered of leading better lives or worse lives. And just as up to this point the actions of the forefathers of mankind have been determined by the pursuit of pleasure and avoidance of pain, so now they begin to be practically determined by the pursuit of goodness and avoidance of evil. This rise from a bestial to a moral plane of existence involves the acquirement of the knowledge of good and evil. Conscience is generated to play a part analogous to that played by the sense of pain in the lower stages of life, and to keep us from wrong-doing. To the mere love of life, which is the conservative force that keeps the whole animal world in existence, there now comes gradually to be superadded the feeling of religious aspiration, which is nothing more nor less than the yearning after the highest possible completeness of spiritual life. In the lower stages of human development this religious aspiration has as yet but an embryonic existence, and moral obligations are still but imperfectly recognized. It is only after long ages of social discipline, fraught with cruel afflictions and grinding misery, that the moral law becomes dominant and religious aspiration intense and abiding in the soul. When such a stage is reached, we have at last in man a creature different in kind from his predecessors, and fit for an everlasting life of progress, for a closer and closer communion with God in beatitude that shall endure.

X

THE RELATIVITY OF EVIL

AS we survey the course of this wonderful evolution, it begins to become manifest that moral evil is simply the characteristic of the lower state of living as looked at from the higher state. Its existence is purely relative, yet it is profoundly real, and in a process of perpetual spiritual evolution its presence in some hideous form throughout a long series of upward stages is indispensable. Its absence would mean stagnation, quiescence, unprogressiveness. For the moment we exercise conscious choice between one course of action and another, we recognize the difference between better and worse, we foreshadow the whole grand contrast between good and bad. In the process of spiritual evolution, therefore, evil must needs be present. But the nature of evolution also requires that it should be evanescent. In the higher stages that which is worse than the best need no longer be positively bad. After the nature of that which the upward-striving soul abhors has been forever impressed upon it, amid the long vicissitudes of its pilgrimage through the dark realms of sin and expiation, it is at length equipped for its final sojourn

> "In the blest kingdoms meek of joy and love."

From the general analogies furnished in the process of evolution, we are entitled to hope that, as it approaches its goal and man comes nearer to God, the fact of evil will lapse into a mere memory, in which the shadowed past shall serve as a background for the realized glory of the present.

Thus we have arrived at the goal of my argument. We can at least begin to realize distinctly that unless our eyes had been opened at some time, so that we might come to know the good and the evil, we should never have become fashioned in God's image. We should have been the denizens of a world of puppets, where neither morality nor religion could have found place or meaning. The mystery of evil remains a mystery still, but it is no longer a harsh dissonance such as greeted the poet's ear when the doors of hell were thrown open; for we see that this mystery belongs among the profound harmonies in God's creation. This reflection may have in it something that is consoling as we look forth upon the ills of the world. Many are the pains of life, and the struggle with wickedness is hard;

its course is marked with sorrow and tears. But assuredly its deep impress upon the human soul is the indispensable background against which shall be set hereafter the eternal joys of heaven!

THE COSMIC ROOTS OF LOVE AND SELF-SACRIFICE

O abbondante grazia, ond' io presunsi
Ficcar lo viso per la luce eterna
Tanto, che la veduta vi consunsi!
Nel suo profondo vidi che s' interna,
Legato con amore in un volume,
Ciò che per l' universo si squaderna.

DANTE, *Paradiso*, xxxiii. 82.

I

THE SUMMER FIELD, AND WHAT IT TELLS US

THERE are few sights in Nature more restful to the soul than a daisied field in June. Whether it be at the dewy hour of sunrise, with blithe matin songs still echoing among the tree-tops, or while the luxuriant splendour of noontide fills the delicate tints of the early foliage with a pure glory of light, or in that more pensive time when long shadows are thrown eastward and the fresh breath of the sea is felt, or even under the solemn mantle of darkness, when all forms have faded from sight and the night air is musical with the murmurs of innumerable insects, amid all the varying moods through which the daily cycle runs, the abiding sense is of unalloyed happiness, the profound tranquillity of mind and heart that nothing ever brings save the contemplation of perfect beauty. One's thought is carried back for the moment to that morning of the world when God looked upon his work and saw that it was good. If in the infinite and eternal Creative Energy one might imagine some inherent impulse perpetually urging toward fresh creation, what could it be more likely to be than the divine contentment in giving objective existence to the boundless and subtle harmonies whereof our world is made? That it is a world of perfect harmony and unsullied beauty, who can doubt as he strolls through this summer field? As our thought plays lightly with its sights and sounds, there is nothing but gladness in the laugh of the bobolink; the thrush's tender note tells only of the sweet domestic companionship of the nest; creeping and winged things emerging from their grubs fill us with the sense of abounding life; and the myriad buttercups, hallowed with vague memories of June days in childhood, lose none of their charm in reminding us of the profound sympathy and mutual dependence in which the worlds of flowers and insects have grown up. The blades of waving grass, the fluttering leaves upon the lilac bush, appeal to us with rare fascination; for the green stuff that fills their cellular tissues, and the tissues of all green things that grow, is the world's great inimitable worker of wonders; its marvellous alchemy takes dead matter and breathes into it the breath of life. But for that magician chlorophyll, conjuring with sunbeams, such things as animal life and conscious intelligence would be impossible; there would be no problems of creation, nor philosopher to speculate upon them. Thus the delight that sense impression gives, as we wander among buttercups and daisies, becomes deepened into gratitude and veneration, till we quite understand how the rejuvenescence of Nature should in all ages have aroused men to acts of worship, and should call forth from modern masters of music, the most religious of the arts of expression, outbursts of sublimest song.

And yet we need but come a little closer to the facts to find them apparently telling us a very different story. The moment we penetrate below the superficial aspect of things the scene is changed. In the folklore of Ireland there is a widespread belief in a fairyland of eternal hope and brightness and youth situated a little way below the roots of the grass. From that land of Tir nan Og, as the peasants call it, the secret springs of life shoot forth their scions in this visible world, and thither a few favoured mortals have now and then found their way. It is into no blest country of Tir nan Og that our stern science leads us, but into a scene of ugliness and hatred, strife and massacre. Macaulay tells of the battlefield of Neerwinden, that the next summer after that frightful slaughter the whole countryside was densely covered with scarlet poppies, which people beheld with awe as a token of wrath in heaven over the deeds wrought on earth by human passions. Any summer field, though mantled in softest green, is the scene of butchery as wholesale as that of Neerwinden and far more ruthless. The life of its countless tiny denizens is one of unceasing toil, of crowding and jostling, where the weaker fall unpitied by the way, of starvation from hunger and cold, of robbery utterly shameless and murder utterly cruel. That green sward in taking possession of its territory has exterminated scores of flowering plants of the sort that human economics and æsthetics stigmatize as weeds; nor do the blades of the victorious army dwell side by side in amity, but in their eagerness to dally with the sunbeams thrust aside and supplant one another without the smallest compunction. Of the crawling insects and those that hum through the air, with the quaint snail, the burrowing worm, the bloated toad, scarce one in a hundred but succumbs to the buffets of adverse fortune before it has achieved maturity and left offspring to replace it. The early bird, who went forth in quest of the worm, was lucky if at the close of a day as full of strife and peril as ever knight-errant encountered, he did not himself serve as a meal for some giant foe in the gloaming. When we think of the hawk's talons buried in the breast of the wren, while the relentless beak tears the little wings from the quivering, bleeding body, our mood toward Nature is changed, and we feel like recoiling from a world in which such black injustice, such savage disregard for others, is part of the general scheme.

II

SEEMING WASTEFULNESS OF THE COSMIC PROCESS

BUT as we look still further into the matter, our mood is changed once more. We find that this hideous hatred and strife, this wholesale famine and death, furnish the indispensable conditions for the evolution of higher and higher types of life. Nay more, but for the pitiless destruction of all individuals that fall short of a certain degree of fitness to the circumstances of life into which they are born, the type would inevitably degenerate, the life would become lower and meaner in kind. Increase in richness, variety, complexity of life is gained only by the selection of variations above or beyond a certain mean, and the prompt execution of a death sentence upon all the rest. The principle of natural selection is in one respect intensely Calvinistic: it elects the one and damns the ninety and nine. In these processes of Nature there is nothing that savours of communistic equality; but " to him that hath shall be given, and from him that hath not shall be taken away even that which he hath." Through this selection of a favoured few, a higher type of life — or at all events a type in which there is more life — is attained in many cases, but not always. Evolution and progress are not synonymous terms. The survival of the fittest is not always a survival of the best or of the most highly organized. The environment is sometimes such that increase of fitness means degeneration of type, and the animal and vegetable worlds show many instances of degeneration. One brilliant instance is that which has preserved the clue to the remote ancestry of the vertebrate type. The molluscoid ascidian, rooted polyp-like on the sea beach in shallow water, has an embryonic history which shows that its ancestors had once seen better days, when they darted to and fro, fishlike, through the waves, with the prophecy of a vertebrate skeleton within them. This is a case of marked degeneration. More often survival of the fittest simply preserves the type unchanged through long periods of time. But now and then under favourable circumstances it raises the type. At all events, whenever the type is raised, it is through survival of the fittest, implying destruction of all save the fittest.

This last statement is probably true of all plants and of all animals except that as applied to the human race it needs some transcendently important qualifications which students of evolution are very apt to neglect. I shall by and by point out these qualifications. At present we may note that the development of civilization, on its political side, has been a stupendous struggle for life, wherein the possession of certain physical and mental attributes has enabled some tribes or nations to prevail over others, and to subject or exterminate them. On its industrial side the struggle has been no less fierce; the evolution of higher efficiency through merciless competition is a matter of common knowledge. Alike in the occupations of war and in those of peace, superior capacity has thriven upon victories in which small heed has been paid to the wishes or the welfare of the vanquished. In human history perhaps no relation has been more persistently repeated than that of the hawk and the wren. The aggression has usually been defended as in the interests of higher civilization, and in the majority of cases the defence has been sustained by the facts. It has indeed very commonly been true that the survival of the strongest is the survival of the fittest.

Such considerations affect our mood toward Nature in a way that is somewhat bewildering. On the one hand, as we recognize in the universal strife and slaughter a stern discipline through which the standard of animate existence is raised and the life of creatures variously enriched, we become to some extent reconciled to the facts. Assuming, as we all do, that the attainment of higher life is in itself desirable, our minds cannot remain utterly inhospitable toward things, however odious in themselves, that help toward the desirable end. Since we cannot rid the world of them, we acquiesce in their existence as part of the machinery of God's providence, the intricacies of which our finite minds cannot hope to unravel. On the other hand, a thought is likely to arise which in days gone by we should have striven to suppress as too impious for utterance; but it is wiser to let such thoughts find full expression, for only thus can we be sure of understanding the kind of problem we are trying to solve. Is not, then, this method of Nature, which achieves progress only through misery and death, an exceedingly brutal and clumsy method? Life, one would think, must be dear to the everlasting Giver of life, yet how cheap it seems to be held in the general scheme of things! In order that some race of moths may attain a certain fantastic contour and marking of their wings, untold thousands of moths are doomed to perish prematurely. Instead of making the desirable object once for all, the method of Nature is to make something else and reject it, and so on through countless ages, till by slow approximations the creative thought is realized. Nature is often called thrifty, yet could anything be more prodigal or more cynical than the waste of individual lives? Does it not remind one of Charles Lamb's famous story of the Chinaman whose house accidentally burned down and roasted a pig, whereupon the dainty meat was tasted and its fame spread abroad until epicures all over China were to be seen carrying home pigs and forthwith setting fire to their houses? We need but add that the custom thus established lasted for centuries, during which every dinner of pig involved the sacrifice of a homestead, and we seem to have a close parody upon the wastefulness of Nature, or of what is otherwise called in these days the Cosmic Process. Upon such a view as this the Cosmic Process appears in a high degree unintelligent, not to say immoral.

III

CALIBAN'S PHILOSOPHY

POLYTHEISM easily found a place for such views as these, inasmuch as it could explain the unseemly aspects of Nature offhand by a reference to malevolent deities. With Browning's Caliban, in his meditations upon Setebos, that god whom he conceived in his own image, the recklessness of Nature is mockery engendered half in spite, half in mere wantonness. Setebos, he says,

"is strong and Lord.
'Am strong myself compared to yonder crabs
That march now from the mountain to the sea;
'Let twenty pass, and stone the twenty-first,
Loving not, hating not, just choosing so.
'Say, the first straggler that boasts purple spots
Shall join the file, one pincer twisted off;
'Say, this bruised fellow shall receive a worm,
And two worms he whose nippers end in red;
As it likes me each time, I do: So He."

Such is the kind of philosophy that commends itself to the beastly Caliban, as he sprawls in the mire with small eft things creeping down his back. His half-fledged mind can conceive no higher principle of action — nothing more artistic, nothing more masterful — than wanton mockery, and naturally he attributes it to his God; it is for him a sufficient explanation of that little fragment of the Cosmic Process with which he comes into contact.

IV

CAN IT BE THAT THE COSMIC PROCESS HAS NO RELATION TO MORAL ENDS?

BUT as long as we confine our attention to the universal struggle for life and the survival of the fittest, without certain qualifications presently to be mentioned, it is difficult for the most profound intelligence to arrive at conclusions much more satisfactory than Caliban's. If the spirit shown in Nature's works as thus contemplated is not one of wanton mockery, it seems at any rate to be a spirit of stolid indifference. It indicates a Blind Force rather than a Beneficent Wisdom at the source of things. It is in some such mood as this that Huxley tells us, in his famous address delivered at Oxford, in 1893, that there is no sanction for morality in the Cosmic Process. "Men in society," he says, "are undoubtedly subject to the cosmic process. As among other animals, multiplication goes on without cessation and involves severe competition for the means of support. The struggle for existence tends to eliminate those less fitted to adapt themselves to the circumstances of their existence. The strongest, the most self-assertive, tend to tread down the weaker. . . . Social progress means a checking of the cosmic process at every step and the substitution for it of another, which may be called the ethical process; the end of which is not the survival of those who may happen to be the fittest, in respect of the whole of the conditions which exist, but of those who are ethically the best." Again, says Huxley, "let us understand, once for all, that the ethical progress of society depends, not on imitating the cosmic process, still less in running away from it, but in combating it." And again he tells us that while the moral sentiments have undoubtedly been evolved, yet since "the immoral sentiments have no less been evolved, there is so far as much natural sanction for the one as for the other." And yet again, "the cosmic process has no sort of relation to moral ends."

When these statements were first made they were received with surprise, and they have since called forth much comment, for they sound like a retreat from the position which an evolutionist is expected to hold. They distinctly assert a breach of continuity between evolution in general and the evolution of Man in particular; and thus they have carried joy to the hearts of sundry theologians, of the sort that like to regard Man as an infringer upon Nature. If there is no natural sanction for morality, then the sanction must be supernatural, and forthwith such theologians greet Huxley as an ally!

They are mistaken, however. Huxley does not really mean to assert any such breach of continuity as is here suggested. In a footnote to his printed address he makes a qualification which really cancels the group of statements I have quoted. "Of course," says Huxley, "strictly speaking, social life and the ethical process, in virtue of which it advances toward perfection, are part and parcel of the general process of evolution." Of course they are; and of course the general process of evolution is the cosmic process, it is Nature's way of doing things. But when my dear Huxley a moment ago was saying that the "cosmic process has no sort of relation to moral ends," he was using the phrase in a more restricted sense; he was using it as equivalent to what Darwin called "natural selection," what Spencer called "survival of the fittest," which is only one part of the cosmic process. Now most assuredly survival of the fittest, as such, has no sort of relation to moral ends. Beauty and ugliness, virtue and vice, are all alike to it. Side by side with the exquisite rose flourishes the hideous tarantula, and in too many cases the villain's chances of livelihood are better than the saint's. As I said a while ago, if we confine our attention to the survival of the fittest in the struggle for existence, we are not likely to arrive at conclusions much more satisfactory than Caliban's

> "As it likes me each time, I do: So He."

In such a universe we may look in vain for any sanction for morality, any justification for love and self-sacrifice; we find no hope in it, no consolation; there is not even dignity in it, nothing whatever but resistless all-producing and all-consuming energy.

Such a universe, however, is not the one in which we live. In the cosmic process of evolution, whereof our individual lives are part and parcel, there are other agencies at work besides natural selection, and the story of the struggle for existence is far from being the whole story. I have thus far been merely stating difficulties; it is now time to point out the direction in which we are to look for a solution of them. I think it can be shown that the principles of morality have their roots in the deepest foundations of the universe, that the cosmic process is ethical in the profoundest sense, that in that far-off morning of the world, when the stars sang together and the sons of God shouted for joy, the beauty of self-sacrifice and disinterested love formed the chief burden of the mighty theme.

V

FIRST STAGES IN THE GENESIS OF MAN

LET us begin by drawing a correct though slight outline sketch of what the cosmic process of evolution has been. It is not strange that when biologists speak of evolution they should often or usually have in mind simply the modifications wrought in plants and animals by means of natural selection. For it was by calling attention to such modifications that Darwin discovered a true cause of the origin of species by physiological descent from allied species. Thus was demonstrated the fact of evolution in its most important province; men of science were convinced that the higher forms of life are derived from lower forms, and the old notion of special creations was exploded once and forever. This was a great scientific achievement, one of the greatest known to history, and it is therefore not strange that language should often be employed as if Evolutionism and Darwinism were synonymous. Yet not only are there extensive regions in the doctrine of evolution about which Darwin knew very little, but even as regards the genesis of species his theory was never developed in his own hands so far as to account satisfactorily for the genesis of man.

It must be borne in mind that while the natural selection of physical variations will go far toward explaining the characteristics of all the plants and all the beasts in the world, it remains powerless to account for the existence of man. Natural selection of physical variations might go on for a dozen eternities without any other visible result than new forms of plant and beast in endless and meaningless succession. The physical variations by which man is distinguished from apes are not great. His physical relationship with the ape is closer than that between cat and dog, which belong to different families of the same order; it is more like that between cat and leopard, or between dog and fox, different genera in the same family. But the moment we consider the minds of man and ape, the gap between the two is immeasurable. Mr. Mivart has truly said that, with regard to their total value in nature, the difference between man and ape transcends the difference between ape and blade of grass. I should be disposed to go further and say, that while for zoölogical man you can hardly erect a distinct family from that of the chimpanzee and orang, on the other hand, for psychological man you must erect a distinct kingdom; nay, you must even dichotomize the universe, putting Man on one side and all things else on the other. How can this overwhelming contrast between psychical and physical difference be accounted for? The clue was furnished by Alfred Russel Wallace, the illustrious co-discoverer of natural selection. Wallace saw that along with the general development of mammalian intelligence a point must have been reached in the history of one of the primates, when variations of intelligence were more profitable to him than variations in body. From that time forth that primate's intelligence went on by slow increments acquiring new capacity, while his body changed but little. When once he could strike fire, and chip a flint, and use a club, and strip off the bear's hide to cover himself, there was clearly no further use in thickening his own hide, or lengthening and sharpening his claws. Natural selection is the keenest capitalist in the universe; she never loses an instant in seizing the most profitable place for investment, and her judgment is never at fault. Forthwith, for a million years or more she invested all her capital in the psychical variations of this favoured primate, making little change in his body except so far as to aid in the general result, until by and by something like human intelligence of a low grade, like that of the Australian or the Andaman islander, was achieved. The genesis of humanity was by no means yet completed, but an enormous gulf had been crossed.

After throwing out this luminous suggestion Mr. Wallace never followed it up as it admitted and deserved. It is too much to expect one man to do everything, and his splendid studies in the geographical distribution of organisms may well have left him little time for work in this direction. Who can fail to see that the selection of psychical variations, to the comparative neglect of physical variations, was the opening of a new and greater act in the drama of creation? Since that new departure the Creator's highest work has consisted not in bringing forth new types of body, but in expanding and perfecting the psychical attributes of the one creature in whose life those attributes have begun to acquire predominance. Along this human line of ascent there is no occasion for any further genesis of species, all future progress must continue to be not zoölogical, but psychological, organic evolution gives place to civilization. Thus in the long series of organic beings Man is the last; the cosmic process, having once evolved this masterpiece, could thenceforth do nothing better than to perfect him.

VI

THE CENTRAL FACT IN THE GENESIS OF MAN

THIS conclusion, which follows irresistibly from Wallace's theorem, that in the genesis of Humanity natural selection began to follow a new path, already throws a light of promise over our whole subject, like the rosy dawn of a June morning. But the explanation of the genesis of Humanity is still far from complete. If we compare man with any of the higher mammals, such as dogs and horses and apes, we are struck with several points of difference: *first*, the greater progressiveness of man, the widening of the interval by which one generation may vary from its predecessor; *secondly*, the definite grouping in societies based on more or less permanent family relationships, instead of the indefinite grouping in miscellaneous herds or packs; *thirdly*, the possession of articulate speech; *fourthly*, the enormous increase in the duration of infancy, or the period when parental care is needed. Twenty-four years ago, in a course of lectures given yonder in Holden Chapel, I showed that the circumstance last named is the fundamental one, and the others are derivative. It is the prolonged infancy that has caused the progressiveness and the grouping into definite societies, while the development of language was a consequence of the increasing intelligence and sociality thus caused. In the genesis of Humanity the central fact has been the increased duration of infancy. Now, can we assign for that increased duration an adequate cause? I think we can. The increase of intelligence is itself such a cause. A glance at the animal kingdom shows us no such thing as infancy among the lower orders. It is with warm-blooded birds and mammals that the phenomena of infancy and the correlative parental care really begin.

VII

THE CHIEF CAUSE OF MAN'S LENGTHENED INFANCY

THE reason for this is that any creature's ability to perceive and to act depends upon the registration of experiences in his nerve-centres. It is either individual or ancestral experience that is thus registered; or, strictly speaking, it is both. It is of the first importance that this point should be clearly understood, and therefore a few words of elementary explanation will not be superfluous.

When you learn to play the piano, you gradually establish innumerable associations between printed groups of notes and the corresponding keys on the keyboard, and you also train the fingers to execute a vast number of rapid and complicated motions. The process is full of difficulty, and involves endless repetition. After some years perhaps you can play at sight and with almost automatic ease a polonaise of Liszt or a ballad of Chopin. Now this result is possible only because of a bodily change which has taken place in you. Countless molecular alterations have been wrought in the structure of sundry nerves and muscles, especially in the gray matter of sundry ganglia, or nerve-centres. Every ganglion concerned in the needful adjustments of eyes and fingers and wrists, or in the perception of musical sounds, has undergone a change more or less profound. The nature of the change is largely a matter of speculation; but that point need not in any way concern us. It is enough for us to know that there is such a change, and that it is a registration of experiences. The pianist has registered in the intimate structure of his nervous system a world of experiences entirely foreign to persons unfamiliar with the piano; and upon this registration his capacity depends.

Now the same explanation applies to all bodily movements whatever, whether complicated or simple. In writing, in walking, in talking, we are making use of nervous registrations that have been brought about by an accumulation of experiences. To pick up a pencil from the table may seem a very simple act, yet a baby cannot do it. It has been made possible only by the education of the eyes, of the muscles that move the eyes, of the arm and hand, and of the nerve-centres that coördinate one group of movements with another. All this multiform education has consisted in a gradual registration of experiences. In like manner all the actions of man upon the world about him are made up of movements, and every such movement becomes possible only when a registration is effected in sundry nerve-centres.

But this is not the whole story. The case is undoubtedly the same with those visceral movements, involuntary and in great part unconscious, which sustain life; the beating of the heart, the expansion and contraction of the lungs, the slight changes of calibre in the blood-vessels, even the movements of secretion that take place in glands. All these actions are governed by nerves, and these nerves have had to be educated to their work. This education has been a registration of experiences chiefly ancestral, throughout an enormous past, practically since the beginnings of vertebrate life.

With the earlier and simpler forms of animal existence these visceral movements are the only ones, or almost the only ones, that have to be made. Presently the movements of limbs and sense organs come to be added, and as we rise in the animal scale, these movements come to be endlessly various and complex, and by and by implicate the nervous system more and more deeply in complex acts of perception, memory, reasoning, and volition. Obviously, therefore, in the development of the individual organism the demands of the nervous system upon the vital energies concerned in growth must come to be of paramount importance, and in providing for them the entire embryonic life must be most profoundly and variously affected. Though we may be unable to follow the processes in detail, the truth of this general statement is plain and undeniable.

I say, then, that when a creature's intelligence is low, and its experience very meagre, consisting of a few simple perceptions and acts that occur throughout life with monotonous regularity, all the registration of this experience gets effected in the nerve-centres of its offspring before birth, and they come into the world fully equipped for the battle of life, like the snapping turtle, which snaps with decisive vigour as soon as it emerges from the egg. Nothing is left plastic to be finished after birth, and so the life of each generation is almost an exact repetition of its predecessor. But when a creature's intelligence is high, and its experience varied and complicated, the registration of all this experience in the nerve-centres of its offspring does not get accomplished before birth. There is not time enough. The most important registrations, such as those needed for breathing and swallowing and other indispensable acts, are fully effected; others, such as those needed for handling and walking, are but partially effected; others, such as those involved in the recognition of creatures not important as enemies or prey, are left still further from completion.

Much is left to be done by individual experience after birth. The animal, when first born, is a baby dependent upon its mother's care. At the same time its intelligence is far more plastic, and it remains far more teachable, than the lower animal that has no babyhood. Dogs and horses, lions and elephants, often increase in sagacity until late in life ; and so do apes, which, along with a higher intelligence than any other dumb animals, have a much longer babyhood.

We are now prepared to appreciate the marvellous beauty of Nature's work in bringing Man upon the scene. Nowhere is there any breach of continuity in the cosmic process. First we have natural selection at work throughout the organic world, bringing forth millions of species of plant and animal, seizing upon every advantage, physical or mental, that enables any species to survive in the universal struggle. So far as any outward observer, back in the Cretaceous or early Eocene periods, could surmise, this sort of confusion might go on forever. But all at once, perhaps somewhere in the upper Eocene or lower Miocene, it appears that among the primates, a newly developing family already distinguished for prehensile capabilities, one genus is beginning to sustain itself more by mental craft and shiftiness than by any physical characteristic. Forthwith does natural selection seize upon any and every advantageous variation in this craft and shiftiness, until this favoured genus of primates, this *Homo Alalus*, or speechless man, as we may call him, becomes preëminent for sagacity, as the mammoth is preëminent for bulk, or the giraffe for length of neck.

VIII

SOME OF ITS EFFECTS

IN doing this, natural selection has unlocked a door and let in a new set of causal agencies. As Homo Alalus grows in intelligence and variety of experience, his helpless babyhood becomes gradually prolonged, and passes not into sudden maturity, but into a more or less plastic intermediate period of youth. Individual experience, as contrasted with ancestral experience, counts for much more than ever before in shaping his actions, and thus he begins to become progressive. He can learn many more new ways of doing things in a hundred thousand years than any other creature could have done in a much longer time. Thus the rate of progress is enhanced, the increasing intelligence of Homo Alalus further lengthens his plastic period of life, and this in turn further increases his intelligence and emphasizes his individuality. The evidence is abundant that Homo Alalus, like his simian cousins, was a gregarious creature, and it is not difficult to see how, with increasing intelligence, the gestures and grunts used in the horde for signalling must come to be clothed with added associations of meaning, must gradually become generalized as signs of conceptions. This invention of spoken language, the first invention of nascent humanity, remains to this day its most fruitful invention. Henceforth ancestral experience could not simply be transmitted through its inheritable impress upon the nervous system, but its facts and lessons could become external materials and instruments of education. Then the children of Homo Alalus, no longer speechless, began to accumulate a fund of tradition, which in the fulness of time was to bloom forth in history and poetry, in science and theology. From the outset the acquisition of speech must greatly have increased the rate of progress, and enhanced the rudimentary sociality.

With the lengthening of infancy the period of maternal help and watchfulness must have lengthened in correspondence. Natural selection must keep those two things nicely balanced, or the species would soon become extinct. But Homo Alalus had not only a mother, but brethren and sisters; and when the period of infancy became sufficiently long, there were a series of Homunculi Alali, the eldest of whom still needed more or less care while the third and the fourth were arriving upon the scene. In this way the sentiment of maternity became abiding. The cow has strong feelings of maternal affection for periods of a few weeks at a time, but lapses into indifference and probably cannot distinguish her grown-up calves as sustaining any nearer relation to herself than other members of the herd. But Femina Alala, with her vastly enlarged intelligence, is called upon for the exercise of maternal affection until it becomes a permanent part of her nature. In the same group of circumstances begins the permanency of the marital relation. The warrior-hunter grows accustomed to defending the same wife and children and to helping them in securing food. Cases of what we may term wedlock, arising in this way, occur sporadically among apes; its thorough establishment, however, was not achieved until after the genesis of Humanity had been completed in most other respects. The elaborate researches of Westermarck have proved that permanent marriage exists even among savages; it did not prevail, however, until the advanced stage of culture represented by the Aztecs in aboriginal America and the Neolithic peoples of ancient Europe. As for strict monogamy, it is a comparatively late achievement of civilization. What the increased and multiplied duration of infancy at first accomplished was the transformation of miscellaneous hordes of Homines Alali into organized clans recognizing kinship through the mother, as exemplified among nearly all American Indians when observed by Europeans.

Thus by gradual stages we have passed from four-footed existence into Human Society, and once more I would emphasize the fact that nowhere do we find any breach of continuity, but one factor sets another in operation, which in turn reacts upon the first, and so on in a marvellously harmonious consensus. Surely if there is anywhere in the universe a story matchless for its romantic interest, it is the story of the genesis of Man, now that we are at length beginning to be able to decipher it. We see that there is a good deal more in it than mere natural selection. At bottom, indeed, it is all a process of survival of the fittest, but the secondary agencies we have been considering have brought us to a point where our conception of the Struggle for Life must be enlarged. Out of the manifold compounding and recompounding of primordial clans have come the nations of mankind in various degrees of civilization, but already in the clan we find the ethical process at work. The clan has a code of morals well adapted to the conditions amid which it exists. There is an ethical sentiment in the clan; its members have duties toward it; it punishes sundry acts even with death, and rewards or extols sundry other acts. We are, in short, in an ethical atmosphere, crude and stifling, doubtless, as compared with that of a modern Christian homestead, but still unquestionably ethical.

IX

ORIGIN OF MORAL IDEAS AND SENTIMENTS

NOW, here at last, in encountering the ethical process at work, have we detected a breach of continuity? Has the moral sentiment been flung in from outside, or is it a natural result of the cosmic process we have been sketching? Clearly it is the latter. There has been no breach of continuity. When the prolongation of infancy produced the clan, there naturally arose reciprocal necessities of behaviour among the members of the clan, its mothers and children, its hunters and warriors. If such reciprocal necessities were to be disregarded the clan would dissolve, and dissolution would be general destruction. For, bear in mind, the clan, when once evolved, becomes the unit whose preservation is henceforth the permanent necessity. It is infancy that has made it so. A miscellaneous horde, with brief infancies for its younger members, may survive a very extensive slaughter; but in a clan, where the proportion of helpless children is much greater, and a considerable division of labour between nurses and warriors has become established, the case is different. An amount or degree of calamity sufficient to break up its organization will usually mean total ruin. Hence, when Nature's travail has at length brought forth the clan, its requirements forthwith become paramount, and each member's conduct from babyhood must conform to them. Natural selection henceforth invests her chief capital in the enterprise of preserving the clan. In that primitive social unit lie all the potentiality and promise of Human Society through untold future ages. So for age after age those clans in which the conduct of the individuals is best subordinated to the general welfare are sure to prevail over clans in which the subordination is less perfect. As the maternal instinct had been cultivated for thousands of generations before clanship came into existence, so for many succeeding ages of turbulence the patriotic instinct, which prompts to the defence of home, was cultivated under penalty of death. Clans defended by weakly loyal or cowardly warriors were sure to perish. Unflinching bravery and devoted patriotism were virtues necessary to the survival of the community, and were thus preserved until at the dawn of historic times, in the most grandly militant of clan societies, we find the word *virtus* connoting just these qualities, and no sooner does the fateful gulf yawn open in the forum than a Curtius joyfully leaps into it, that the commonwealth may be preserved from harm.

Now the moment a man's voluntary actions are determined by conscious or unconscious reference to a standard outside of himself and his selfish motives, he has entered the world of ethics, he has begun to live in a moral atmosphere. Egoism has ceased to be all in all, and altruism — it is an ugly-sounding word, but seems to be the only one available — altruism has begun to assert its claim to sovereignty. In the earlier and purely animal stages of existence it was right enough for each individual to pursue pleasure and avoid pain; it did not endanger the welfare of the species, but on the contrary it favoured that welfare; in its origin avoidance of pain was the surest safeguard for the perpetuation of life, and with due qualifications that is still the case. But as soon as sociality became established, and Nature's supreme end became the maintenance of the clan organization, the standard for the individual's conduct became shifted, permanently and forever shifted. Limits were interposed at which pleasure must be resigned and pain endured, even certain death encountered, for the sake of the clan; perhaps the individual did not always understand it in that way, but at all events it was for the sake of some rule recognized in the clan, some rule which, as his mother and all his kin had from his earliest childhood inculcated upon him, *ought* to be obeyed. This conception of ought, of obligation, of duty, of debt to something outside of self, resulted from the shifting of the standard of conduct outside of the individual's self. Once thus externalized, objectivized, the ethical standard demanded homage from the individual. It furnished the rule for a higher life than one dictated by mere selfishness. Speaking after the manner of naturalists, I here use the phrase "higher life" advisedly. It was the kind of life that was conducive to the preservation and further development of the highest form of animate existence that had been attained. It appears to me that we begin to find for ethics the most tremendous kind of sanction in the nature of the cosmic process.

A word of caution may be needed. It is not for a moment to be supposed that when primitive men began crudely shaping their conduct with reference to a standard outside of self, they did so as the result of meditation, or with any realizing sense of what they were doing. That has never been the method of evolution. Its results steal upon the world noiselessly and unobserved, and only after they have long been with us does reason employ itself upon them. The wolf does not eat the lamb because he regards a flesh diet as necessary to his health and activity, but because he is hungry, and, like Mr. Harold Skimpole, he likes lamb. It was no intellectual perception of needs and consequences that lengthened the maternal instinct with primeval mothers as the period of infancy lengthened. Nor was it any such intellectual perception that began to enthrone "I ought" in the place of "I wish." If in the world's recurrent crises Nature had waited to be served by the flickering lamp of reason, the story would not have been what it is. Her method has been, with the advent of a new situation, to modify the existing group of instincts; and this work she will not let be slighted; in her train follows the lictor with the symbols of death, and there is neither pity nor relenting. In the primeval warfare between clans, those in which the instincts were not so modified as to shift the standard of conduct outside of the individual's self must inevitably have succumbed and perished under the pressure of those in which the instincts had begun to experience such modification. The moral law grew up in the world not because anybody asked for it, but because it was needed for the world's work. If it is not a product of the cosmic process, it would be hard to find anything that could be so called.

X

THE COSMIC PROCESS EXISTS PURELY FOR THE SAKE OF MORAL ENDS

I HAVE not undertaken to make my outline sketch of the genesis of Humanity approach to completeness, but only to present enough salient points to make a closely connected argument in showing how morality is evolved in the cosmic process and sanctioned by it. In a more complete sketch it would be necessary to say something about the genesis of Religion. One of the most interesting, and in my opinion one of the most profoundly significant facts in the whole process of evolution is the first appearance of religious sentiment at very nearly the same stage at which the moral law began to grow up. To the differential attributes of Humanity already considered there needs to be added the possession of religious sentiment and religious ideas. We may safely say that this is the most important of all the distinctions between Man and other animals; for to say so is simply to epitomize the whole of human experience as recorded in history, art, and literature. Along with the rise from gregariousness to incipient sociality, along with the first stammerings of articulate speech, along with the dawning discrimination between right and wrong, came the earliest feeble groping toward a world beyond that which greets the senses, the first dim recognition of the Spiritual Power that is revealed in and through the visible and palpable realm of nature. And universally since that time the notion of Ethics has been inseparably associated with the notion of Religion, and the sanction for Ethics has been held to be closely related with the world beyond phenomena. There are philosophers who maintain that with the further progress of enlightenment this close relation will cease to be asserted, that Ethics will be divorced from Religion, and that the groping of the Human Soul after its God will be condemned as a mere survival from the errors of primitive savagery, a vain and idle reaching out toward a world of mere phantoms. I mention this opinion merely to express unqualified and total dissent from it. I believe it can be shown that one of the strongest implications of the doctrine of evolution is the Everlasting Reality of Religion.

But we have not time at present for entering upon so vast a subject. Let this reference suffice to show that it has not been passed over or forgotten in my theory of the genesis of Humanity. In an account of the evolution of the religious sentiment, its first appearance as coeval, or nearly so, with the beginnings of the ethical process would assume great importance. We have here been concerned purely with the ethical process itself, which we have found to be — as Huxley truly says in his footnote — part and parcel of the general process of evolution. Our historical survey of the genesis of Humanity seems to show very forcibly that a society of Human Souls living in conformity to a perfect Moral Law is the end toward which, ever since the time when our solar system was a patch of nebulous vapour, the cosmic process has been aiming. After our cooling planet had become the seat of organic life, the process of natural selection went on for long ages seemingly, but not really at random; for our retrospect shows that its ultimate tendency was towards singling out one creature and exalting his intelligence.

Now we have seen that this increase of intelligence itself, by entailing upon Man the helplessness of infancy, led directly to the production of those social conditions that called the ethical process into play and set it actively to work. Thus we may see the absurdity of trying to separate the moral nature of Man from the rest of his nature, and to assign for it a separate and independent history. The essential solidarity in the cosmic process will admit of no such fanciful detachment of one part from another. All parts are involved one in another. Again, the ethical process is not only part and parcel of the cosmic process, but it is its crown and consummation. Toward the spiritual perfection of Humanity the stupendous momentum of the cosmic process has all along been tending. That spiritual perfection is the true goal of evolution, the divine end that was involved in the beginning. When Huxley asks us to believe that "the cosmic process has no sort of relation to moral ends," I feel like replying with the question, "Does not the cosmic process exist purely for the sake of moral ends?" Subtract from the universe its ethical meaning, and nothing remains but an unreal phantom, the figment of false metaphysics.

We have now arrived at a position from which a glimmer of light is thrown upon some of the dark problems connected with the moral government of the world. We can begin to see why misery and wrong-doing are permitted to exist, and why the creative energy advances by such slow and tortuous methods toward the fulfilment of its divine purpose. In order to understand these things, we must ask, What is the ultimate goal of the ethical process? According to the utilitarian philosophy that goal is the completion of human happiness. But this interpretation soon refutes itself. A world of completed happiness might well be a world of quiescence, of stagnation, of automatism, of blankness; the dynamics of evolution would have no place in it. But suppose we say that the ultimate goal of the ethical process is the perfecting of human character? This form of statement contains far more than the other. Consummation of happiness is a natural outcome of the perfecting of character, but that perfecting can be achieved only through struggle, through discipline, through resistance. It is for him that *overcometh* that the crown of life is reserved. The consummate product of a world of evolution is the character that *creates* happiness, that is replete with dynamic possibilities of fresh life and activity in directions forever new. Such a character is the reflected image of God, and in it are contained the promise and potency of life everlasting.

No such character could be produced by any act of special creation in a garden of Eden. It must be the consummate efflorescence of long ages of evolution, and a world of evolution is necessarily characterized by slow processes, many of which to a looker-on seem like tentative experiments, with an enormous sacrifice of ephemeral forms of life. Thus while the Earth Spirit goes on, unhasting, yet unresting, weaving in the loom of Time the visible garment of God, we begin to see that even what look like failures and blemishes have been from the outset involved in the accomplishment of the all-wise and all-holy purpose, the perfecting of the spiritual Man in the likeness of his Heavenly Father.

These points will receive further indirect illustration as we complete our outline sketch of the cosmic process in the past. It is self-evident that in the production of an ethical character, altruistic feelings and impulses must coöperate. Let us look, then, for some of the beginnings of altruism in the course of the evolution of life.

XI

MATERNITY AND THE EVOLUTION OF ALTRUISM

FROM an early period of the life-history of our planet, the preservation of the species had obviously become quite as imperative an end as the preservation of individuals; one is at first inclined to say more imperative, but if we pause long enough to remember that total failure to preserve individuals would be equivalent to immediate extinction of the species, we see that the one requirement is as indispensable as the other. Individuals must be preserved, and the struggle for life is between them; species must be preserved, and in the rivalry those have the best chance in which the offspring are either most redundant in numbers or are best cared for. In plants and animals of all but the higher types, the offspring are spores or seeds, larvæ or spawn, or self-maturing eggs. In the absence of parental care the persistence of the species is ensured by the enormous number of such offspring. A single codfish, in a single season, will lay six million eggs, nearly all of which perish, of course, or else in a few years the ocean could not hold all the codfishes. But the princess in the Arabian tale, who fought with the malignant Jinni, could not for her life pick up all the scattered seeds of the pomegranate; and in like manner of the codfish eggs, one in a million or so escapes and the species is maintained. But in the highest types of animal life in birds and mammals — with their four-chambered hearts, completely arterialized blood, and enhanced consciousness — parental care becomes effective in protecting the offspring, and the excessive production diminishes. With birds, the necessity of maintaining a high temperature for the eggs leads to the building of nests, to a division of labour in the securing of food, to the development of a temporary maternal instinct, and to conjugal alliances which in some birds last for a lifetime. As the eggs become effectively guarded the number diminishes, till instead of millions there are half a dozen. When it comes to her more valuable products, Nature is not such a reckless squanderer after all. So with mammals, for the most part the young are in litters of half a dozen or so; but in Man, with his prolonged and costly infancy, parental care reaches its highest development and concentration in rearing children one by one.

From the dawn of life, I need hardly say, all the instincts that have contributed to the preservation of offspring must have been favoured and cultivated by natural selection, and in many cases even in types of life very remote from Humanity, such instincts have prompted to very different actions from such as would flow from the mere instinct of self-preservation. If you thrust your walking-stick into an ant-heap, and watch the wild hurry and confusion that ensues when part of the interior is laid bare, you will see that all the workers are busy in moving the larvæ into places of safety. It is not exactly a maternal instinct, for the workers are not mothers, but it is an altruistic instinct involving acts of self-devotion. So in the case of fish that ascend rivers or bays at spawning time, the actions of the whole shoal are determined by a temporarily predominant instinct that tends towards an altruistic result. In these and lower grades of life there is already something at work besides the mere struggle for life between individuals; there is something more than mere contention and slaughter; there is the effort toward cherishing another life than one's own. In these regions of animate existence we catch glimpses of the cosmic roots of love and self-sacrifice. For the simplest and rudest productions of Nature mere egoism might suffice, but to the achievement of any higher aim some adumbration of altruism was indispensable.

Before such divine things as love and self-art, and literature. Along with the rise from gregariousness to incipient sociality, along with the first stammerings of articulate speech, along with the dawning discrimination between right and wrong, came the earliest feeble groping toward a world beyond that which greets the senses, the first dim recognition of the Spiritual Power that is revealed in and through the visible and palpable realm of nature. And universally since that time the notion of Ethics has been inseparably associated with the notion of Religion, and the sanction for Ethics has been held to be closely related with the world beyond phenomena. There are philosophers who maintain that with the further progress of enlightenment this close relation will cease to be asserted, that Ethics will be divorced from Religion, and that the groping of the Human Soul after its God will be condemned as a mere survival from the errors of primitive savagery, a vain and idle reaching out toward a world of mere phantoms. I mention this opinion merely to express unqualified and total dissent from it. I believe it can be shown that one of the strongest implications of the doctrine of evolution is the Everlasting Reality of Religion.

But we have not time at present for entering upon so vast a subject. Let this reference suffice to show that it has not been passed over or forgotten in my theory of the genesis of Humanity. In an account of the evolution of the religious sentiment, its first appearance as coeval, or nearly so, with the beginnings of the ethical process would assume great importance. We have here been concerned purely with the ethical process itself, which we have found to be — as Huxley truly says in his footnote — part and parcel of the general process of evolution. Our historical survey of the genesis of Humanity seems to show very forcibly that a society of Human Souls living in conformity to a perfect Moral Law is the end toward which, ever since the time when our solar system was a patch of nebulous vapour, the cosmic process has been aiming. After our cooling planet had become the seat of organic life, the process of natural selection went on for long ages seemingly, but not really at random; for our retrospect shows that its ultimate tendency was towards singling out one creature and exalting his intelligence.

Now we have seen that this increase of intelligence itself, by entailing upon Man the helplessness of infancy, led directly to the production of those social conditions that called the ethical process into play and set it actively to work. Thus we may see the absurdity of trying to separate the moral nature of Man from the rest of his nature, and to assign for it a separate and independent history. The essential solidarity in the cosmic process will admit of better than egoism and dinosaurs, and at some time during the long period of the Chalk deposits there began the tremendous world-wide rivalry between these dragons and the rising class of warm-blooded viviparous mammals which had hitherto played an insignificant part in the world. The very name of this class of animals is taken from the function of motherhood. The offspring of these " mammas " come into the world as recognizable personalities, so far developed that the relation between mother and child begins as a relation of personal affection. The new-born mammal is not an egg nor a caterpillar, but a baby, and the baby's dawning consciousness opens up a narrow horizon of sympathy and tenderness, a horizon of which the expansion shall in due course of ages reveal a new heaven and a new earth. At first the nascent altruism was crude enough, but it must have sufficed to make mutual understanding and coöperation more possible than before; it thus contributed to the advancement of mammalian intelligence, and prepared the way for gregariousness, by and by to culminate in sociality, as already described. In the history of creation the mammals were moderns, equipped with more effective means of ensuring survival than their oviparous antagonists. The development of complete mammality was no sudden thing. Some of the dinosaurs may have been ovoviviparous, like some modern serpents. The Australian duck-bill, a relic of the most ancient incipient mammality, is still oviparous; the opossum and kangaroo preserve the record of a stage when viviparousness was but partially achieved; but with the advent of the placental mammals the break with the old order of things was complete.

The results of the struggle are registered in the Eocene rocks. The ancient world had found its Waterloo. Gone were the dragons who so long had lorded it over both hemispheres,—brontosaurs, iguanodons, plesiosaurs, lælaps, pterodactyls,—all gone; their uncouth brood quite vanished from the earth, and nothing left alive as a reminder, save a few degenerate collateral kin, such as snakes and crocodiles, objects of dread and loathing to higher creatures. Never in the history of our planet has there been a more sweeping victory than that of the mammals, nor has Nature had any further occasion for victories of that sort. The mammal remains the highest type of animal existence, and subsequent progress has been shown in the perfecting of that type where most perfectible.

XII

THE OMNIPRESENT ETHICAL TREND

WITH the evolution of true maternity Nature was ready to proceed to her highest grades of work. Intelligence was next to be lifted to higher levels, and the order of mammals with greatest prehensile capacities, the primates with their incipient hands, were the most favourable subjects in which to carry on this process. The later stages of the marvellous story we have already passed in review. We have seen the accumulating intelligence lengthen the period of infancy, and thus prolong the relations of loving sympathy between mother and child; we have seen the human family and human society thus brought into existence; and along therewith we have recognized the necessity laid upon each individual for conforming his conduct to a standard external to himself. At this point, without encountering any breach of continuity in the cosmic process, we crossed the threshold of the ethical world, and entered a region where civilization, or the gradual perfecting of the spiritual qualities, is henceforth Nature's paramount aim. To penetrate further into this region would be to follow the progress of civilization, while the primitive canoe develops into the Cunard steamship, the hieroglyphic battle-sketch into epics and dramas, sun-catcher myths into the Newtonian astronomy, wandering tribes into mighty nations, the ethics of the clan into the moral law for all men. The story shows us Man becoming more and more clearly the image of God, exercising creative attributes, transforming his physical environment, incarnating his thoughts in visible and tangible shapes all over the world, and extorting from the abysses of space the secrets of vanished ages. From lowly beginnings, without breach of continuity, and through the cumulative action of minute and inconspicuous causes, the resistless momentum of cosmic events has tended toward such kind of consummation ; and part and parcel of the whole process, inseparably wrapped up with every other part, has been the evolution of the sentiments which tend to subordinate mere egoism to unselfish and moral ends.

A narrow or partial survey might fail to make clear the solidarity of the cosmic process. But the history of creation, when broadly and patiently considered, brings home to us with fresh emphasis the profound truth of what Emerson once said, that "the lesson of life . . . is to believe what the years and the centuries say against the hours; to resist the usurpation of particulars; to penetrate to their catholic sense." When we have learned this lesson, our misgivings vanish, and we breathe a clear atmosphere of faith. Though in many ways God's work is above our comprehension, yet those parts of the world's story that we can decipher well warrant the belief that while in Nature there may be divine irony, there can be no such thing as wanton mockery, for profoundly underlying the surface entanglement of her actions we may discern the omnipresent ethical trend. The moral sentiments, the moral law, devotion to unselfish ends, disinterested love, nobility of soul, — these are Nature's most highly wrought products, latest in coming to maturity; they are the consummation, toward which all earlier prophecy has pointed. We are right, then, in greeting the rejuvenescent summer with devout faith and hope. Below the surface din and clashing of the struggle for life we hear the undertone of the deep ethical purpose, as it rolls in solemn music through the ages, its volume swelled by every victory, great or small, of right over wrong, till in the fulness of time, in God's own time, it shall burst forth in the triumphant chorus of Humanity purified and redeemed.

THE EVERLASTING REALITY OF RELIGION

Here sits he shaping wings to fly ;
His heart forebodes a mystery :
He names the name Eternity.

That type of Perfect in his mind
In Nature can he nowhere find.
He sows himself on every wind.

He seems to hear a Heavenly Friend,
And through thick veils to apprehend
A labour working to an end.

TENNYSON, *The Two Voices.*

I

"DEO EREXIT VOLTAIRE"

THE visitor to Geneva whose studies have made him duly acquainted with the most interesting human personality of all that are associated with that historic city will never leave the place without making a pilgrimage to the château of Ferney. In that refined and quiet rural homestead things still remain very much as on the day when the aged Voltaire left it for the last visit to Paris, where his long life was worthily ended amid words and deeds of affectionate homage. One may sit down at the table where was written the most perfect prose, perhaps, that ever flowed from pen, and look about the little room with its evidences of plain living and high thinking, until one seems to recall the eccentric figure of the vanished Master, with his flashes of shrewd wisdom and caustic wit, his insatiable thirst for knowledge, his consuming hatred of bigotry and oppression, his merciless contempt for shams, his boundless enthusiasm of humanity. As we stroll in the park, that quaint presence goes along with us till all at once in a shady walk we come upon something highly significant and characteristic, the little parish church with its Latin inscription over the portal, *Deo erexit Voltaire*, *i. e.* "Voltaire built it for God," and as we muse upon it, the piercing eyes and sardonic but not unkindly smile seem still to follow us. What meant this eccentric inscription?

When Voltaire became possessor of the manor of Ferney, the church was badly out of repair, and stood where it obstructed the view from certain windows of the château. So he had it cleared away, and built in a better spot the new church that is still there. It was duly consecrated, and the Pope further hallowed it with some relics of ancient saints, and there for many a year the tenants and dependents of the manor assembled for divine service. Nowhere in France had Voltaire ever seen a church dedicated simply to God; it was always to Our Lady of This or Saint So-and-so of That; always there was some intermediary between the devout soul and the God of its worship. Not thus should it be with Voltaire's church, built upon his own estate to minister to the spiritual needs of his people. It should be dedicated simply and without further qualification to the worship and service of God. Furthermore, it was built and dedicated, not by any ecclesiastical or corporate body, but by the lord of that manor, the individual layman, Voltaire.

This, I say, was highly characteristic and significant. It gave terse and pointed expression to Voltaire's way of looking at such things. Church and theology were ignored, and the individual soul was left alone with its God. The Protestant reformers and other free-thinkers had stopped far short of this. In place of an infallible Church they had left an infallible Book; if they rejected transubstantiation, they retained as obligatory such doctrines as those of the incarnation and atonement; if they laughed at the miracles of mediæval saints, they would allow no discredit to be thrown upon those of the apostolic age; in short, they left standing a large part, if not the larger part, of the supernatural edifice within which the religious mind of Europe had so long been sheltered. But Voltaire regarded that whole supernatural edifice as so much rubbish which was impeding the free development of the human mind, and ought as quickly as possible to be torn to pieces and cleared away. His emotions as well as his reason were concerned in this conclusion. Organized Christianity, as it then existed in France, was responsible for much atrocious injustice, and in neighbouring lands the Inquisition still existed. Ecclesiastical bigotry, the prejudice of ignorance, whatever tended to hold people in darkness and restrain them from the free and natural use of their faculties, Voltaire hated with all the intensity of which he was capable. He summed it all up in one abstract term and personified it as "The Infamous," and the watchword of that life of tireless vigilance was "Crush the Infamous!" Supernatural theology had too often pressed into the service of "The Infamous," and for supernatural theology Voltaire could find no place in his scheme of things. He lost no chance of assailing it with mockery and sarcasm made terrible by the earnestness of his purpose, until he came in many quarters to be regarded as the most inveterate antagonist the Church had ever known.

Yet among the great men of letters in France contemporary with Voltaire, the most part went immeasurably farther than he, and went in a different direction withal, for they denied the reality of Religion. Few of them, indeed, believed in the existence of God, or would have had anything to do with building a house of worship. It is related of David Hume that when dining once in a party of eighteen at the house of Baron d'Holbach, he expressed a doubt as to whether any person could anywhere be found to avow himself dogmatically an atheist. "Indeed, my dear sir," quoth the host, "you are this moment sitting at table with seventeen such persons." Among that group of philosophers were men of great intelligence and lofty purpose, such as D'Alembert, Diderot, Helvétius, Condorcet, Buffon, men with more of the real spirit of Christianity in their natures than could be found in half the churches of Christendom. The roots of their atheism were emotional rather than philosophical. It was part of the generous but rash and superficial impatience with which they disowned all connection whatever with a church that had become subservient to so much that was bad. Their atheism was one of the fruits of the vicious policy which had suppressed Huguenotism in France; it was an early instance of what has since been often observed, that materialism and atheism are much more apt to flourish in Romanist than in Protestant countries. The form of religion which is already to some extent purified and rationalized awakens no such violent revulsion in free-thinking minds as the form that is more heavily encumbered with remnants of obsolete primitive thought. Moreover, the rationalizing religion of Protestant countries is commonly found in alliance with political freedom. In France under the Old Régime, the Catholic religion was stigmatized as an ally of despotism, as well as a congeries of absurd doctrines and ceremonies. The best minds felt their common sense shocked by it no less than their reason. No very deep thinking was done on the subject; their treatment of it was in general extremely shallow.

The forms which religious sentiment had assumed in the Middle Ages had become unintelligible; the most highly endowed minds were dead to the sublimity of Gothic architecture, and saw nothing but grotesque folly in Dante's poetry. They seriously believed that religious doctrines and ecclesiastical government were originally elaborate systems of fraud, devised by sagacious and crafty tyrants for the sole purpose of enslaving the multitude of mankind. No discrimination was shown. They were as ready to throw away belief in God as in the miracles of St. Columba, and to scout at the notion of a future life in the same terms as those in which they denounced the forged donation of Constantine. The flippant ease with which they disposed of the greatest questions, in crass ignorance of the very nature of the problem to be solved, was well illustrated in the remark of the astronomer Lalande, that he had swept the entire heavens with his telescope and found no God there. A similar instance of missing the point was furnished about fifty years ago by the eminent physiologist Moleschott, when he exclaimed, "No thought without phosphorus," and congratulated himself that he had forever disposed of the human soul. I am inclined to think that those are the two remarks most colossal in their silliness that ever appeared in print.

Very different in spirit was the acute reply of Laplace when reminded by Napoleon that his great treatise on the dynamics of the solar system contained no allusion to God. " Sire," said Laplace, " I had no need of that hypothesis." This remark was profound in its truth, for it meant that in order to give a specific explanation of any single group of phenomena, it will not do to appeal to divine action, which is equally the source of all phenomena. Science can deal only with secondary causes. In the eighteenth century men of science were learning that such is the case; men like Diderot and D'Alembert had come to realize it, and they believed that the logical result was atheism. This was because the only idea of God which they had ever been taught to entertain was the Latin idea of a God remote from the world and manifested only through occasional interferences with the order of nature. When they dismissed this idea they declared themselves atheists. If they had been familiar with the Greek idea of God as immanent in the world and manifested at every moment through the orderly sequence of its phenomena, their conclusions would doubtless have been very different.

To these philosophers Voltaire's unshaken theism seemed a mere bit of eccentric conservatism. But along with that queer and intensely independent personality there went a stronger intellectual grasp and a more calm intellectual vision than belonged to any other Frenchman of the eighteenth century. In the facts of Nature, despite the lifeless piecemeal fashion in which they were then studied, Voltaire saw a rational principle at work which atheism could in nowise account for. To him the universe seemed full of evidences of beneficent purpose, and more than once he set forth with eloquence and power the famous argument from design, which is as old as Xenophon's Memorabilia, and which received its fullest development at the hands of Paley and the authors of the Bridgewater treatises. There is thus yet another significance added to the little church at Ferney. Not only was it the sole church in France dedicated simply to God, and not only was its builder a layman hostile to ecclesiastical doctrines and methods, but he was almost alone among the eminent free-thinkers of his age and country in believing in God and asserting the everlasting reality of religion.

It is therefore that I have cited Voltaire as a kind of text for the present discourse; for it is my purpose to show that, apart from all questions of revelation, the light of nature affords us sufficient ground for maintaining that religion is fundamentally true and must endure forever. It appears to me, moreover, that the materialism of the present day is merely a tradition handed down from the French writers whom Voltaire combated. When Moleschott made his silly remark about phosphorus, it was simply an inheritance of silliness from Lalande. When Haeckel tells us that the doctrine of evolution forbids us to believe in a future life, it is not because he has rationally deduced such a conclusion from the doctrine, but because he takes his opinion on such matters ready-made from Ludwig Büchner, who is simply an echo of the eighteenth century atheist La Mettrie. We shall see that the doctrine of evolution has implications very different from what Haeckel supposes.

But first let me observe in passing that in the English-speaking world there has never been any such divorce between rationalism and religion as in France, and among the glories of English literature are such deeply reverent and profoundly philosophical writings as those of Hooker and Chillingworth, of Bishop Butler and Jonathan Edwards, and in our own time of Dr. Martineau. Nowhere in history, perhaps, have faith and reason been more harmoniously wedded together than in the history of English Protestantism. But the disturbance that affected France in the age of Voltaire now affects the whole Christian world, and every question connected with religion has been probed to depths of which the existence was scarcely suspected a century ago. One seldom, indeed, hears the frivolous mockery in which the old French writers dealt so freely; that was an ebullition of temper called forth by a tyranny that had come to be a social nuisance. The scepticism of our day is rather sad than frivolous; it drags people from long-cherished notions in spite of themselves; it spares but few that are active-minded; it invades the church, and does not stop in the pews to listen, but ascends the pulpit and preaches. There is no refuge anywhere from this doubting and testing spirit of the age. In the attitude of civilized men towards the world in which we live, the change of front has been stupendous; the old cosmology has been overthrown in headlong ruin, attacks upon doctrines have multiplied, and rituals, creeds, and Scriptures are overhauled and criticised, until a young generation grows up knowing nothing of the sturdy faith of its grandfathers save by hearsay; for it sees everything in heaven and earth called upon to show its credentials.

II

THE REIGN OF LAW, AND THE GREEK IDEA OF GOD

THE general effect of this intellectual movement has been to discredit more than ever before the Latin idea of God as a power outside of the course of nature and occasionally interfering with it. In all directions the process of evolution has been discovered, working after similar methods, and this has forced upon us the belief in the Unity of Nature. We are thus driven to the Greek conception of God as the power working in and through nature, without interference or infraction of law. The element of chance, which some atheists formerly admitted into their scheme of things, is expelled. Nobody would now waste his time in theorizing about a fortuitous concourse of atoms. We have so far spelled out the history of creation as to see that all has been done in strict accordance with law. The method has been the method of evolution, and the more we study it the more do we discern in it intelligible coherence. One part of the story never gives the lie to another part.

So beautiful is all this orderly coherence, so satisfying to some of our intellectual needs, that many minds are inclined to doubt if anything more can be said of the universe than that it is a Reign of Law, an endless aggregate of coexistences and sequences. When we say that one star attracts another star, we do not really know that there is any pulling in the case; all we know is that a piece of cosmical matter in the presence of another piece of matter alters its space-relations in a certain specified way. Among the coexistences and sequences there is an order which we can detect, and a few thinkers are inclined to maintain that this is the whole story. Such a state of mind, which rests satisfied with the mere content of observed facts, without seeking to trace their ultimate implications, is the characteristic of what Auguste Comte called Positivism. It is a more refined phase of atheism than that of the guests at Baron d'Holbach's, but its adherents are few; for the impetus of modern scientific thought tends with overwhelming force towards the conception of a single First Cause, or Prime Mover, perpetually manifested from moment to moment in all the Protean changes that make up the universe. As I have elsewhere sought to show, this is practically identical with the Athanasian conception of the immanent

Deity.[1] Modern men of science often call this view of things Monism, but if questioned narrowly concerning the immanent First Cause, they reply with a general disclaimer of knowledge, and thus entitle themselves to be called by Huxley's term "Agnostics." Thirty-five years ago Spencer, taking a hint from Sir William Hamilton, used the phrase "The Unknowable" as an equivalent for the immanent Deity considered *per se;* but I always avoid that phrase, for in practice it invariably leads to wrong conceptions, and naturally, since it only expresses one side of the truth. If on the one hand it is impossible for the finite Mind to fathom the Infinite, on the other hand it is practically misleading to apply the term Unknowable to the Deity that is revealed in every pulsation of the wondrously rich and beautiful life of the Universe. For most persons no amount of explanation will prevent the use of the word Unknowable from seeming to remove Deity to an unapproachable distance, whereas the Deity revealed in the process of evolution is the ever present God without whom not a sparrow falls to the ground, and whose voice is heard in each whisper of conscience, even while his splendour dwells in the white ray from yonder star that began its earthward flight while Abraham's shepherds watched their flocks. It is clear that many persons have derived from Spencer's use of the word Unknowable an impression that he intends by means of metaphysics to refine God away into nothing; whereas he no more cherishes any such intention than did St. Paul, when he asked, "Who hath known the mind of the Lord, or who hath been his counsellor?" — no more than Isaiah did when he declared that even as the heavens are higher than the earth, so are Jehovah's ways higher than our ways and his thoughts than our thoughts.

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[1] *The Idea of God as affected by Modern Knowledge.* See supra.

III

WEAKNESS OF MATERIALISM

JUST here comes along the materialist and asks us some questions, tries to serve on us a kind of metaphysical writ of *quo warranto*. If modern physics leads us inevitably to the conception of a single infinite Power manifested in all the phenomena of the knowable Universe, by what authority do we identify that Power with the indwelling Deity as conceived by St. Athanasius? The Athanasian Deity is to some extent fashioned in Man's image; he is, to say the least, like the psychical part of ourselves. After making all possible allowances for the gulf which separates that which is Infinite and Absolute from that which is Finite and Relative, an essential kinship is asserted between God and the Human Soul. By what authority, our materialist will ask, do we assert any such kinship between the Human Soul and the Power which modern physics reveals as active throughout the universe? Is it not going far beyond our knowledge to assert any such kinship? And would it not be more modest and becoming in us to simply designate this ever active universal Power by some purely scientific term, such as Force?

This argument is to-day a very familiar one, and it wears a plausible aspect; it is couched in a spirit of scientific reserve, which wins for it respectful consideration. The modest and cautious spirit of science has done so much for us, that it is always wise to give due heed to its warnings. Let us beware of going beyond our knowledge, says the materialist. We know nothing but phenomena as manifestations of an indwelling force; nor have we any ground for supposing that there is anything psychical, or even quasi-psychical, in the universe outside of the individual minds of men and other animals. Moreover, continues the materialist, the psychical phenomena of which we are conscious — reason, memory, emotion, volition — are but peculiarly conditioned manifestations of the same indwelling force which under other conditions appears as light or heat or electricity. All such manifestations are fleeting, and beyond this world of fleeting phenomena we have no warrant, either in science or in common sense, for supposing that anything whatever exists. This world that is cognizable through the senses is all that there is, and the story of it that we can decipher by the aid of terrestrial experience is the whole story; the Unseen World is a mere figment inherited from the untutored fancy of primeval man. Such is the general view of things which Materialism urges upon us with the plea of scientific sobriety and caution; and to many minds, as already observed, it wears a plausible aspect.

Nevertheless, when subjected to criticism, this theory of things soon loses its sober and plausible appearance and is seen to be eminently rash and shallow. In the first place, there is no such correlation or equivalence as is alleged between physical forces and the phenomena of consciousness. The correlations between different modes of motion have been proved by actual quantitative measurement, and never could have been proved in any other way. We know, for example, that heat is a mode of motion; the heat that will raise the temperature of a pound of water by one degree of Fahrenheit is exactly equivalent to the motion of 772 pounds falling through a distance of one foot. In similar wise we know that light, electricity, and magnetism are modes of motion, transferable one into another; and, although precise measurements have not been accomplished, there is no reason for doubting that the changes in brain tissue, which accompany each thought and feeling, are also modes of motion, transferable into the other physical modes. But thought and feeling themselves, which can neither be weighed nor measured, do not admit of being resolved into modes of motion. They do not enter into the closed circuit of physical transformations, but stand forever outside of it, and concentric with that segment of the circuit which passes through the brain. It may be that thought and feeling could not continue to exist if that physical segment of the circuit were taken away. It may be that they could. To assume that they could not is surely the height of rash presumption. The correlation of forces exhibits Mind as in no wise a product of Matter, but as something in its growth and manifestations outside and parallel. It is incompatible with the theory that the relation of the human soul to the body is like that of music to the harp; but it is quite compatible with the time-honoured theory of the human soul as indwelling in the body and escaping from it at death.

In the second place, when we come to the denial of all kinship between the human soul and the Infinite Power that is revealed in all phenomena, the materialistic theory raises difficulties as great as those which it seeks to avoid. The difficulties which it wishes to avoid are those which inevitably encumber the attempt to conceive of Deity as Personality exerting volition and cherishing intelligent purpose. Such difficulties are undeniably great; nay, they are insuperable. When we speak of Intelligence and Will and Personality, we must use these words with the meanings in which experience has clothed them, or we shall soon find ourselves talking nonsense. The only intelligence we know is strictly serial in its nature, and is limited by the existence of independent objects of cognition. What flight of analogy can bear us across the gulf that divides such finite intelligence from that unlimited Knowledge to which all things past and future are ever present? Volition, as we know it, implies alternative courses of action, antecedent motives, and resulting effort. Like intelligence, its operations are serial. What, then, do we really mean, if we speak of omnipresent Volition achieving at one and the same moment an infinite variety of ends? So, too, with Personality: when we speak of personality that is not circumscribed by limits, are we not using language from which all the meaning has evaporated?

Such difficulties are insurmountable. Words which have gained their meanings from finite experience of finite objects of thought must inevitably falter and fail when we seek to apply them to that which is Infinite. But we do not mend matters by employing terms taken from the inorganic world rather than from human personality. To designate the universal Power by some scientific term, such as Force, does not help us in the least. All our experience of force is an experience of finite forces antagonized by other forces. We can frame no conception whatever of Infinite Force comprising within itself all the myriad antagonistic attractions and repulsions in which the dynamic universe consists. We go beyond our knowledge when we speak of Infinite Force quite as much as we do when we speak of Infinite Personality. Indeed, no word or phrase which we seek to apply to Deity can be other than an extremely inadequate and unsatisfactory symbol. From the very nature of the case it must always be so, and if we once understand the reason why, it need not vex or puzzle us.

It is not only when we try to speculate about Deity that we find ourselves encompassed with difficulties and are made to realize how very short is our mental tether in some directions. This world, in its commonest aspects, presents many baffling problems, of which it is sometimes wholesome that we should be reminded. If you look at a piece of iron, it seems solid; it looks as if its particles must be everywhere in contact with one another. And yet, by hammering, or by great pressure, or by intense cold, the piece of iron may be compressed, so that it will occupy less space than before. Evidently, then, its particles are not in contact, but are separated from one another by unoccupied tracts of enveloping space. In point of fact, these particles are atoms arranged after a complicated fashion in clusters known as molecules. The word *atom* means something that cannot be cut. Now, are these iron atoms divisible or indivisible? If they are divisible, then what of the parts into which each one can be divided; are they also divisible? and so on forever. But if these iron atoms are indivisible, how can we conceive such a thing? Can we imagine two sides so close together that no plane of cleavage could pass between them? Can we imagine cohesive tenacity too great to be overcome by any assignable disruptive force, and therefore infinite? Suppose, now, we heat this piece of iron to a white heat. Scientific inquiry has revealed the fact that its atom-clusters are floating in an ocean of ether, in which are also floating the atom-clusters of other bodies and of the air about us. The heating is the increase of wave-motion in this ether, until presently a secondary series of intensely rapid waves appear as white light. Now this ether would seem to be of infinite rarity, since it does not affect the weight of bodies, and yet its wave-motions imply an elasticity far greater than that of coiled steel. How can we imagine such powerful resilience combined with such extreme tenuity?

These are a few of the difficulties of conception in which the study of physical science abounds, and I cite them because it is wholesome for us to bear in mind that such difficulties are not confined to theological subjects. They serve to show how our powers of conceiving ideas are strictly limited by the nature of our experience. The illustration just cited from the luminiferous ether simply shows how during the past century the study of radiant forces has introduced us to a mode of material existence quite different from anything that had formerly been known or suspected. In this mode of matter we find attributes united which all previous experience had taught us to regard as contradictory and incompatible. Yet the facts cannot be denied; hard as we may find it to frame the conception, this light-bearing substance is at the same time almost infinitely rare and almost infinitely resilient. If such difficulties confront us upon the occasion of a fresh extension of our knowledge of the physical world, what must we expect when we come to speculate upon the nature and modes of existence of God? Bearing this in mind, let us proceed to consider the assumption that the Infinite Power which is manifested in the universe is essentially psychical in its nature; in other words, that between God and the Human Soul there is real kinship, although we may be unable to render any scientific account of it. Let us consider this assumption historically, and in the light of our general knowledge of Evolution.

IV

RELIGION'S FIRST POSTULATE: THE QUASI-HUMAN GOD

IT is with purpose that I use the word *assumption.* As a matter of history, the existence of a quasi-human God has always been an assumption or postulate. It is something which men have all along taken for granted. It probably never occurred to anybody to try to prove the existence of such a God until it was doubted, and doubts on that subject are very modern. Omitting from the account a few score of ingenious philosophers, it may be said that all mankind, the wisest and the simplest, have taken for granted the existence of a Deity, or deities, of a psychical nature more or less similar to that of Humanity. Such a postulate has formed a part of all human thinking from primitive ages down to the present time. The forms in which it has appeared have been myriad in number, but all have been included in this same fundamental assumption. The earliest forms were those which we call fetichism and animism. In fetichism the wind that blows a tree down is endowed with personality and supposed to exert conscious effort; in animism some ghost of a dead man is animating that gust of wind. In either case a conscious volition similar to our own, but outside of us, is supposed to be at work. There has been some discussion as to whether fetichism or animism is the more primitive, and some writers would regard fetichism as a special case of animism; but it is not necessary to my present purpose that such questions should be settled. The main point is this, that in the earliest phases of theism each operation of Nature was supposed to have some quasi-human personality behind it. Such phases we find among contemporary savages, and there is abundant evidence of their former existence among peoples now civilized. In the course of ages there was a good deal of generalizing done. Poseidon could shake the land and preside over the sea, angry Apollo could shoot arrows tipped with pestilence, mischievous Hermes could play pranks in the summer breezes, while as lord over all, though with somewhat fitful sway, stood Zeus on the summit of Olympus, gathering the rain-clouds and wielding the thunderbolt. Nothing but increasing knowledge of Nature was needed to convert such Polytheism into Monotheism, even into the strict Monotheism of our own time, in which the whole universe is the multiform manifestation of a single Deity that is still regarded as in some real and true sense quasi-human. As the notion of Deity has thus been gradually generalized, from a thousand local gods to one omnipresent God, it has been gradually stripped of its grosser anthropomorphic vestments. The tutelar Deity of a savage clan is supposed to share with his devout worshippers in the cannibal banquet; the Gods of Olympus made war and love, and were moved to fits of inextinguishable laughter. From our modern Monotheism such accidents of humanity are eliminated, but the notion of a kinship between God and man remains, and is rightly felt to be essential to theism. Take away from our notion of God the human element, and the theism instantly vanishes; it ceases to be a notion of God. We may retain an abstract symbol to which we apply some such epithet as Force, or Energy, or Power, but there is nothing theistic in this. Some ingenious philosopher may try to persuade us to the contrary, but the Human Soul knows better; it knows at least what it wants; it has asked for Theology, not for Dynamics, and it resents all such attempts to palm off upon it stones for bread.

Our philosopher will here perhaps lift up his hands in dismay and cry, "Hold! what matters it what the Human Soul wants? Are cravings, forsooth, to be made to do duty as reasons?" It is proper to reply that we are trying to deal with this whole subject after the manner of the naturalist, which is to describe things as they exist and account for them as best we may. I say, then, that mankind have framed, and for long ages maintained, a notion of God into which there enters a human element. Now if it should ever be possible to abolish that human element, it would not be possible to cheat mankind into accepting the non-human remnant of the notion as an equivalent of the full notion of which they had been deprived. Take away from our symbolic conception of God the human element, and that aspect of theism which has from the outset chiefly interested mankind is gone.

V

RELIGION'S SECOND POSTULATE: THE UNDYING HUMAN SOUL

THAT supremely interesting aspect of theism belongs to it as part and parcel of the general belief in an Unseen World, in which human beings have an interest. The belief in the personal continuance of the individual human soul after death is a very ancient one. The savage custom of burying utensils and trinkets for the use of the deceased enables us to trace it back into the Glacial Period. We may safely say that for much more than a hundred thousand years mankind have regarded themselves as personally interested in two worlds, the physical world which daily greets our waking senses, and another world, comparatively dim and vaguely outlined, with which the psychical side of humanity is more closely connected. The belief in the Unseen World seems to be coextensive with theism; the animism of the lowest savages includes both. No race or tribe of men has ever been found destitute of the belief in a ghost-world. Now, a ghost-world implies the personal continuance of human beings after death, and it also implies identity of nature between the ghosts of man and the indwelling spirits of sun, wind, and flood. It is chiefly because these ideas are so closely interwoven in savage thought that it is often so difficult to discriminate between fetichism and animism. These savage ideas are of course extremely crude in their symbolism. With the gradual civilization of human thinking, the refinement in the conception of the Deity is paralleled by the refinement in the conception of the Other World. From Valhalla to Dante's Paradise, what an immeasurable distance the human mind has travelled! In our modern Monotheism the assumption of kinship between God and the Human Soul is the assumption that there is in Man a psychical element identical in nature with that which is eternal. Belief in a quasi-human God and belief in the Soul's immortality thus appear in their origin and development, as in their ultimate significance, to be inseparably connected. They are part and parcel of one and the same efflorescence of the human mind. Mankind has always entertained them in common, and so entertains them now; and were it possible (which it is not) for science to disprove the Soul's immortality, a theism deprived of this element would surely never be accepted as an equivalent for the theism entertained before. The Positivist argument that the only worthy immortality is survival in the grateful remembrance of one's fellow-creatures would hardly be regarded as anything but a travesty and trick. If the world's long-cherished beliefs are to fall, in God's name let them fall, but save us from the intellectual hypocrisy that goes about pretending we are none the poorer!

VI

RELIGION'S THIRD POSTULATE: THE ETHICAL SIGNIFICANCE OF THE UNSEEN WORLD

OUR account of the rise and progress of the general belief in an Unseen World is, however, not yet complete. No mention has been made of an element which apparently has always been present in the belief. I mean the ethical element. The savage's primeval ghost-world is always mixed up with his childlike notions of what he ought to do and what he ought not to do. The native of Tierra del Fuego, who foreboded a snowstorm because one of Mr. Darwin's party killed some birds for specimens, furnishes an excellent illustration. In a tribe living always on the brink of starvation, any wanton sacrifice of meat must awaken the wrath of the tutelar ancestral ghost-deities who control the weather. Notions of a similar sort are connected with the direful host of omens that dog the savage's footsteps through the world. Whatever conduct the necessities of clan or tribe have prohibited soon comes to wear the aspect of sacrilege.

Thus inextricably intertwined from the moment of their first dim dawning upon the consciousness of nascent Humanity, have been the notion of Deity, the notion of an Unseen World, and the notions of Right and Wrong. In their beginnings theology and ethics were inseparable; in all the vast historic development of religion they have remained inseparable. The grotesque conceptions of primitive men have given place to conceptions framed after wider and deeper experience, but the union of ethics with theology remains undisturbed even in that most refined religious philosophy which ventures no opinion concerning the happiness or misery of a future life, except that the seed sown here will naturally determine the fruit to be gathered hereafter. All the analogies that modern knowledge can bring to bear upon the theory of a future life point to the opinion that the breach of physical continuity is not accompanied by any breach of ethical continuity. Such an opinion relating to matters beyond experience cannot of course be called scientific, but whether it be justifiable or not, my point is that neither in the crude fancies of primitive men nor in the most refined modern philosophy can theology divorce itself from ethics. Take away the ethical significance from our conceptions of the Unseen World and the quasi-human God, and no element of significance remains. All that was vital in theism is gone.

VII

IS THE SUBSTANCE OF RELIGION A PHANTOM, OR AN ETERNAL REALITY?

WE are now prepared to see what is involved in the Reality of Religion. Speaking historically, it may be said that Religion has always had two sides: on the one side it has consisted of a theory, more or less elaborate, and on the other side it has consisted of a group of sentiments conformable to the theory. Now in all ages and in every form of Religion, the theory has comprised three essential elements: first, belief in Deity, as quasi-human; secondly, belief in an Unseen World in which human beings continue to exist after death; thirdly, recognition of the ethical aspects of human life as related in a special and intimate sense to this Unseen World. These three elements are alike indispensable. If any one of the three be taken away, the remnant cannot properly be called Religion. Is then the subject-matter of Religion something real and substantial, or is it a mere figment of the imagination? Has Religion through all these weary centuries been dealing with an eternal verity, or has it been blindly groping after a phantom? Can that history of the universe which we call the Doctrine of Evolution be made to furnish any lesson that will prove helpful in answering this question? We shall find, I think, that it does furnish such a lesson.

But first let us remember that along with the three indispensable elements here specified, every historic Religion has also contained a quantity of cosmological speculations, metaphysical doctrines, priestly rites and ceremonies and injunctions, and a very considerable part of this structure has been demolished by modern criticism. The destruction of beliefs has been so great that we can hardly think it strange if some critics have taken it into their heads that nothing can be rescued. But let us see what the doctrine of evolution has to say. Our inquiry may seem to take us very far afield, but that we need not mind if we find the answer by and by directing us homeward.

VIII

THE FUNDAMENTAL ASPECT OF LIFE

I OFTEN think, when working over my plants, of what Linnæus once said of the unfolding of a blossom: "I saw God in His glory passing near me, and bowed my head in worship." The scientific aspect of the same thought has been put into words by Tennyson: —

> "Flower in the crannied wall,
> I pluck you out of the crannies,
> I hold you here, root and all, in my hand,
> Little flower, — but if I could understand
> What you are, root and all, and all in all,
> I should know what God and man is."

No deeper thought was ever uttered by poet. For in this world of plants, which with its magician chlorophyll conjuring with sunbeams is ceaselessly at work bringing life out of death, — in this quiet vegetable world we may find the elementary principles of all life in almost visible operation. It is one of these elementary principles — a very simple and broad one — that here concerns us.

One of the greatest contributions ever made to scientific knowledge is Herbert Spencer's profound and luminous exposition of Life as the continuous adjustment of inner relations to outer relations. The extreme simplicity of the subject in its earliest illustrations is such that the student at first hardly suspects the wealth of knowledge toward which it is pointing the way. The most fundamental characteristic of living things is their response to external stimuli. If you come upon a dog lying by the roadside and are in doubt whether he is alive or dead, you poke him with a stick; if you get no response you presently conclude that it is a dead dog. So if the tree fails to put forth leaves in response to the rising vernal temperature, it is an indication of death. Pour water on a drooping plant, and it shows its life by rearing its head. The growth of a plant is in its ultimate analysis a group of motions put forth in adjustment to a group of physical and chemical conditions in the soil and atmosphere. A fine illustration is the spiral distribution of leaves about the stem, at different angular intervals in different kinds of plants, but always so arranged as to ensure the most complete exposure of the chlorophyll to the sunbeams. Every feature of the plant is explicable on similar principles. It is the result of a continuous adjustment of relations within the plant to relations existing outside of it. It is important that we should form a clear conception of this, and a contrasted instance will help us. Take one of those storm-glasses in which the approach of atmospheric disturbance sets up a feathery crystallization that changes in shape and distribution as the state of the air outside changes. Here is something that simulates vegetable life, but there is a profound difference. In every one of these changes the liquid in the storm-glass is passive; it is changed and waits until it is changed again. But in the case of a tree, when the increased supply of solar radiance in spring causes those internal motions which result in the putting forth of leaves, it is quite another affair. Here the external change sets up an internal change which leads to a second internal change that anticipates a second external change. It is this active response that is the mark of life.

All life upon the globe, whether physical or psychical, represents the continuous adjustment of inner to outer relations. The degree of life is low or high, according as the correspondence between internal and external relations is simple or complex, limited or extensive, partial or complete, perfect or imperfect. The relations established within a plant answer only to the presence or absence of a certain quantity of light and heat, and to sundry chemical and physical relations in atmosphere and soil. In a polyp, besides general relations similar to these, certain more special relations are established in correspondence with the eternal existence of mechanical irritants; as when its tentacles contract on being touched. The increase of extension acquired by the correspondences as we ascend the animal scale may be seen by contrasting the polyp, which can simply distinguish between soluble and insoluble matter, or between opacity and translucence in its environment, with the keen-scented bloodhound and the far-sighted vulture. And the increase of complexity may be appreciated by comparing the motions respectively gone through by the polyp on the one hand, and by the dog and vulture on the other, while securing and disposing of their prey. The more specific and accurate, the more complex and extensive, is the response to environing relations, the higher and richer, we say, is the life.

IX

HOW THE EVOLUTION OF SENSES EXPANDS THE WORLD

THE whole progression of life upon the globe, in so far as it has been achieved through natural selection, has consisted in the preservation and the propagation of those living creatures in whom the adjustment of inner relations to outer relations is most successful. This is only a more detailed and descriptive way of saying that natural selection is equivalent to survival of the fittest. The shapes of animals, as well as their capacities, have been evolved through almost infinitely slow increments of adjustment upon adjustment. In this way, for instance, has been evolved the vertebrate skeleton, through a process of which Spencer's wonderful analysis is as thrilling as a poem. Or consider the development of the special organs of sense. Among the most startling disclosures of embryology are those which relate to this subject. The most perfect organs of touch are the *vibrissæ* or whiskers of the cat, which act as long levers in communicating impulses to the nerve-fibres that terminate in clusters about the dermal sacs in which they are inserted. These cat-whiskers are merely specialized forms of such hairs as those which cover the bodies of most mammals, and which remain in evanescent shape upon the human skin imbedded in minute sacs. Now in their origin the eye and ear are identical with *vibrissæ*. In the early stages of vertebrate life, while the differentiations of dermal tissue went mostly to the production of hairs or feathers or scales, sundry special differentiations went to the production of ears and eyes. Embryology shows that in mammals the bulb of the eye and the auditory chamber are extremely metamorphosed hair-sacs, the crystalline lens is a differentiated hair, and the aqueous and vitreous humours are liquefied dermal tissue! The implication of these wonderful facts is that sight and hearing were slowly differentiated from the sense of touch. One can seem to discern how in the history of the eye there was at first a concentration of pigment grains in a particular dermal sac, making that spot exceptionally sensitive to light; then came by slow degrees the heightened translucence, the convexity of surface, the refracting humours, and the multiplication of nerve-vesicles arranging themselves as retinal rods. And what was the result of all this for the creature in whom organs of vision were thus developed? There was an immense extension of the range, complexity, and definiteness of the adjustment of inner relations to outer relations; in other words, there was an immense increase of life. There came into existence, moreover, for those with eyes to see it, a mighty visible world that for sightless creatures had been virtually non-existent.

With the further progress of organic life, the high development of the senses was attended or followed by increase of brain development and the correlative intelligence, immeasurably enlarging the scope of the correspondences between the living creature and the outer world. In the case of Man, the adjustments by which we meet the exigencies of life from day to day are largely psychical, achieved by the aid of ideal representations of environing circumstances. Our actions are guided by our theory of the situation, and it needs no illustration to show us that a true theory is an adjustment of one's ideas to the external facts, and that such adjustments are helps to successful living. The whole worth of education is directed toward cultivating the capacity of framing associations of ideas that conform to objective facts. It is thus that life is guided.

X

NATURE'S ETERNAL LESSON IS THE EVERLASTING REALITY OF RELIGION

SO as we look back over the marvellous life-history of our planet, even from the dull time when there was no life more exalted than that of conferva scum on the surface of a pool, through ages innumerable until the present time when Man is learning how to decipher Nature's secrets, we look back over an infinitely slow series of minute adjustments, gradually and laboriously increasing the points of contact between the inner Life and the World environing. Step by step in the upward advance toward Humanity the environment has enlarged. The world of the fresh-water alga was its tiny pool during its brief term of existence; the world of civilized man comprehends the stellar universe during countless æons of time. Every stage of enlargement has had reference to actual existences outside. The eye was developed in response to the outward existence of radiant light, the ear in response to the outward existence of acoustic vibrations, the mother's love came in response to the infant's needs, fidelity and honour were slowly developed as the nascent social life required them; everywhere the internal adjustment has been brought about so as to harmonize with some actually existing external fact. Such has been Nature's method, such is the deepest law of life that science has been able to detect.

Now there was a critical moment in the history of our planet, when love was beginning to play a part hitherto unknown, when notions of right and wrong were germinating in the nascent Human Soul, when the family was coming into existence, when social ties were beginning to be knit, when winged words first took their flight through the air. It was the moment when the process of evolution was being shifted to a higher plane, when civilization was to be superadded to organic evolution, when the last and highest of creatures was coming upon the scene, when the dramatic purpose of creation was approaching fulfilment. At that critical moment we see the nascent Human Soul vaguely reaching forth toward something akin to itself not in the realm of fleeting phenomena but in the Eternal Presence beyond. An internal adjustment of ideas was achieved in correspondence with an Unseen World. That the ideas were very crude and childlike, that they were put together with all manner of grotesqueness, is what might be expected. The cardinal fact is that the crude childlike mind was groping to put itself into relation with an ethical world not visible to the senses. And one aspect of this fact, not to be lightly passed over, is the fact that Religion, thus ushered upon the scene coeval with the birth of Humanity, has played such a dominant part in the subsequent evolution of human society that what history would be without it is quite beyond imagination. As to the dimensions of this cardinal fact there can thus be no question. None can deny that it is the largest and most ubiquitous fact connected with the existence of mankind upon the earth.

Now if the relation thus established in the morning twilight of Man's existence between the Human Soul and a world invisible and immaterial is a relation of which only the subjective term is real and the objective term is non-existent, then, I say, it is something utterly without precedent in the whole history of creation. All the analogies of Evolution, so far as we have yet been able to decipher it, are overwhelming against any such supposition. To suppose that during countless ages, from the seaweed up to Man, the progress of life was achieved through adjustments to external realities, but that then the method was all at once changed and throughout a vast province of evolution the end was secured through adjustments to external non-realities, is to do sheer violence to logic and to common sense. Or, to vary the form of statement, since every adjustment whereby any creature sustains life may be called a true step, and every maladjustment whereby life is wrecked may be called a false step; if we are asked to believe that Nature, after having throughout the whole round of her inferior products achieved results through the accumulation of all true steps and pitiless rejection of all false steps, suddenly changed her method and in the case of her highest product began achieving results through the accumulation of false steps; I say we are entitled to resent such a suggestion as an insult to our understandings. All the analogies of Nature fairly shout against the assumption of such a breach of continuity between the evolution of Man and all previous evolution. So far as our knowledge of Nature goes the whole momentum of it carries us onward to the conclusion that the Unseen World, as the objective term in a relation of fundamental importance that has coexisted with the whole career of Mankind, has a real existence; and it is but following out the analogy to regard that Unseen World as the theatre where the ethical process is destined to reach its full consummation. The lesson of evolution is that through all these weary ages the Human Soul has not been cherishing in Religion a delusive phantom, but in spite of seemingly endless groping and stumbling it has been rising to the recognition of its essential kinship with the ever living God. Of all the implications of the doctrine of evolution with regard to Man, I believe the very deepest and strongest to be that which asserts the Everlasting Reality of Religion.

So far as I am aware, the foregoing argument is here advanced for the first time. It does not pretend to meet the requirements of scientific demonstration. One must not look for scientific demonstration in problems that contain so many factors transcending our direct experience. But as an appeal to our common sense, the argument here brought forward surely has tremendous weight. It seems to me far more convincing than any chain of subtle metaphysical reasoning can ever be; for such chains, however invincible in appearance, are no stronger than the weakest of their links, and in metaphysics one is always uneasily suspecting some undetected flaw. My argument represents the impression that is irresistibly forced upon one by a broad general familiarity with Nature's processes and methods; it therefore belongs to the class of arguments that survive.

Observe, too, that it is far from being a modified repetition of the old argument that beliefs universally accepted must be true. Upon the view here presented, every specific opinion ever entertained by man respecting religious things may be wrong, and in all probability is exceedingly crude, and yet the Everlasting Reality of Religion, in its three indispensable elements as here set forth, remains unassailable. Our common-sense argument puts the scientific presumption entirely and decisively on the side of religion and against all atheistic and materialistic explanations of the universe. It establishes harmony between our highest knowledge and our highest aspirations by showing that the latter no less than the former are a normal result of the universal cosmic process. It has nothing to fear from the advance of scientific discovery, for as these things come to be better understood, it is going to be realized that the days of the antagonism between Science and Religion must by and by come to an end. That antagonism has been chiefly due to the fact that religious ideas were until lately allied with the doctrine of special creations. They have therefore needed to be remodelled and considered from new points of view. But we have at length reached a stage where it is becoming daily more and more apparent that with the deeper study of Nature the old strife between faith and knowledge is drawing to a close; and disentangled at last from that ancient slough of despond the Human Mind will breathe a freer air and enjoy a vastly extended horizon.

L'ENVOI

Yesterday, when weary with writing, and my mind quite dusty with considering these atoms, I was called to supper, and a salad I had asked for was set before me. "It seems, then," said I aloud, "that if pewter dishes, leaves of lettuce, grains of salt, drops of vinegar and oil, and slices of eggs, had been floating about in the air from all eternity, it might at last happen by chance that there would come a salad." "Yes," says my wife, "but not so nice and well-dressed as this of mine is!" — KEPLER, *apud* Tait and Stewart, *Paradoxical Philosophy*.

LIFE EVERLASTING

Disce, ut semper victurus;
Vive, ut cras moriturus

LIFE EVERLASTING

FEW incidents in ancient history are more tragic than the death of Pompey. The spectacle of the mighty warrior who had conquered the Orient and contended with Cæsar for the mastery of the world, a defeated and despairing fugitive, treacherously murdered and lying unburied on the Egyptian strand, was one that drew tears from Cæsar himself and from many another. Yet among the poets of the sixteenth century Renaissance there was one who took a different view of the matter. In an epigram of incomparable beauty Francesco Molsa exclaims:—

Dux, Pharea quamvis jaceas inhumatus arena,
  Non ideo fati est sævior ira tui:
Indignum fuerat tellus tibi victa sepulcrum;
  Non decuit cœlo, te, nisi, Magne, tegi!

It is almost impossible to preserve in a translation the peculiar charm of these lines, but a friend of mine in one of the pleasant student days of forty years ago produced this happy and fitting paraphrase:—

We grieve not, Pompey, that to thee
  No earthly tomb was given;

All lands subdued, naught else was free
To shelter thee but Heaven !

Here the art of the poet lies in the boldness with which he seizes upon one of the most subtle and startling effects of contrast. In the very circumstance which to the ancient mind was the acme of humiliation and horror his genius discerns the occasion for most exalted panegyric, the bitterness of death is lost in the abounding triumph of the soul enlarged and set free, the attributes of woe are transformed into crowning glories.

It is just in this spirit of the Modenese poet that mankind has sought to take away from death its sting, from the grave its victory. That solemn moment in which, for those who have gone before and for us who are to follow, the eye of sense beholds naught save the ending of the world, the entrance upon a black and silent eternity, the eye of faith declares to be the supreme moment of a new birth for the disenthralled soul, the introduction to a new era of life compared with which the present one is not worthy of the name. Τίς δ' οἶδεν, exclaims Euripides,

Τίς δ' οἶδεν εἰ τὸ ζῆν μέν ἐστι κατθανεῖν,
Τὸ κατθανεῖν δὲ ζῆν ;

Who can tell but that this which we call life is really death, from which what we call death is an awakening ? From this vantage ground of thought the human soul comes to look without dread upon the termination of this terrestrial existence. The failure of the bodily powers, the stoppage of the fluttering pulse, the cold stillness upon the features so lately wreathed in smiles of merriment, the corruption of the tomb, the breaking of the ties of love, the loss of all that has given value to existence, the dull blankness of irremediable sorrow, the knell of everlasting farewells,—all this is seized upon by the sovereign imagination of man and transformed into a scene of transcending glory, such as in all the vast career of the universe is reserved for humanity alone. In the highest of creatures the Divine immanence has acquired sufficient concentration and steadiness to survive the dissolution of the flesh and assert an individuality untrammelled by the limitations which in the present life everywhere persistently surround it. Upon this view death is not a calamity but a boon, not a punishment inflicted upon Man, but the supreme manifestation of his exceptional prerogative as chief among God's creatures. Thus the faith in immortal life is the great poetic achievement of the human mind, it is all-pervasive, it is concerned with every moment and every aspect of our existence as moral individuals, and it is the one thing that makes this world inhabitable for beings constructed like ourselves. The destruction of this sublime poetic conception would be like depriving a planet of its atmosphere; it would leave nothing but a moral desert as cold and dead as the savage surface of the moon.

We have now to consider this supreme poetic achievement of man — his belief in his own Immortality — in the light of our modern studies of evolution; we must notice some distinctions between its earlier and later stages, and briefly examine some of the objections which have been alleged in the name of science against the validity of the belief.

Here, as in all departments of the efflorescence of the human mind, the beginnings were lowly, and necessarily so. Nothing very lofty or far-reaching could be expected from the kind of brain that was encased in the Neanderthal skull. Among existing savages there are tribes concerning which travellers have doubted whether they possess ideas that can properly be called religious. But wherever untutored humanity exists we find the conception of a world of ghosts more or less distinctly elaborated; the thronging simulacra of departed tribesmen linger near their accustomed haunts, keenly sensitive to favour or neglect, and quick to punish all infractions of the rules which the stern exigencies of life in the wilderness have prescribed for the conduct of the tribe. This crude primeval ghost-world is thus already closely associated with the ethical side of life, and out of this association have grown some of the most colossal governing agencies by which the development of human society has been influenced. It is therefore not without reason that modern students of anthropology devote so much time to animism and fetichism and other crude workings of that savage intelligence of which the primeval ghost-world is a product.

It is not at all unlikely that the savage's notion of ghosts may have originated chiefly in his experience of dreams, and this is the explanation at present most in favour. The sleeping warrior ranges far and wide over the country, while he chases the buffalo and joins in the medicine dance with comrades known to have died, yet now as active and as voluble as himself; but suddenly the scene changes and he is back in his familiar hut surrounded by his people who can testify that he has not for a moment left them. It is not unlikely, I say, that the notion of one's conscious self as something which can quit the material body and return to it may have started in such often-repeated humble experiences. It can hardly be doubted, however, that this savage conception of the detachable conscious self is simply the primitive phase of the Christian conception of the conscious soul which dwells within the perishable body and quits it at death. Through many

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Here, as in all departments of the efflores cence of the human mind, the beginnings were lowly, and necessarily so. Nothing very lofty or far-reaching could be expected from the kind of brain that was encased in the Neanderthal skull. Among existing savages there are tribes concerning which travellers have doubted whether they possess ideas that can properly be called religious. But wherever untutored humanity exists we find the conception of a world of ghosts more or less distinctly elaborated; the thronging simulacra of departed tribesmen linger near their accustomed haunts, keenly sensitive to favour or neglect, and quick to punish all infractions of the rules which the stern exigencies of life in the wilderness have prescribed for the conduct of the tribe. This crude primeval ghost-world is thus already closely associated with the ethical side of life, and out of this association have grown some of the most colossal governing agencies by which the development of human society has been influenced. It is therefore not without reason that modern students of anthropology devote so much time to animism and fetichism and other crude workings of that savage intelligence of which the primeval ghost-world is a product.

It is not at all unlikely that the savage's notion of ghosts may have originated chiefly in his experience of dreams, and this is the explanation at present most in favour. The sleeping warrior ranges far and wide over the country, while he chases the buffalo and joins in the medicine dance with comrades known to have died, yet now as active and as voluble as himself; but suddenly the scene changes and he is back in his familiar hut surrounded by his people who can testify that he has not for a moment left them. It is not unlikely, I say, that the notion of one's conscious self as something which can quit the material body and return to it may have started in such often-repeated humble experiences. It can hardly be doubted, however, that this savage conception of the detachable conscious self is simply the primitive phase of the Christian conception of the conscious soul which dwells within the perishable body and quits it at death. Though stages of elaboration and refinement the sequence between the two conceptions is unmistakable.

At this point the materialist interposes with an argument which he regards as crushing. He reminds us that if we would estimate the value of an idea, as of a race-horse or a mastiff, it is well to take a look at its pedigree. What, then, is to be said — he scornfully asks — of a doctrine of personal immortality which when reduced to its lowest terms is seen to have started in a savage's misinterpretation of his dreams? What more is needed to prove it unworthy of the serious attention of a scientific student of nature? On the other hand, the student whose mood is truly scientific will feel that one of mankind's cardinal beliefs must not be dismissed too lightly because of the crudeness and error in that primitive stratum of human thought in which it first took root. In his perceptions within certain limits the savage is eminently keen and accurate, but when it comes to intellectual judgments that go at all below the surface of things his mind is a mere farrago of grotesque fancies, wherein, nevertheless, some kernels of truth are here and there embedded. It is a long way from the dragon swallowing the sun to the interposition of the moon's dark body between us and that luminary. The dragon was a figment of fancy, but the eclipse was none the less a fact.

Now if we may take an illustration from the workings of an infant's mind, it is pretty clearly made out that as baby sits propped up among his pillows and turns his eyes hither and thither in following his mother's movements to and fro in the room, she seems in coming toward him to enlarge and in going away to diminish in size, like Alice in Wonderland. It is only with the education of the eye and the small muscles which adjust it that the larger area subtended on the retina instantly means comparative nearness and the smaller area comparative remoteness. At first the sensations are interpreted directly, and the impression upon baby's nascent intelligence is a gross error. The mother is not waxing great and small by turns, but only approaching and receding. If, however, we consider that in baby's mind the enlarged retinal spot means more and the diminished spot less of the pleasurable feelings excited by a familiar and gracious presence, the approach of which is greeted with smiles and outstretched arms, while its departure is bemoaned with cries and tears, we see that as to the essentials of the situation the dawning intelligence is entirely right, although its specific interpretation is quite wrong. Mamma has not really dwindled and vanished like the penny in a conjurer's palm, but has only flitted from the field of vision.

To come back now to our primeval savage; when he sees in a dream his deceased comrade and mistakes the vision for a reality, his error is not concerned with the most fundamental part of the matter. The all-important fact is that this dreaming savage has somehow acquired a mental attitude toward death which is totally different from that of all other animals, and is therefore peculiarly human. Throughout the half-dozen invertebrate branches or sub-kingdoms, where intelligence is manifested only in its lower forms of reflex action and instinct, we find no evidence that any creature has come to know of death. There is a sense, no doubt, in which we may say that the love of life is universal. As a rule, all animals shun danger, and natural selection maintains this rule by the pitiless slaughter of all delinquents, of all in whom the needful inherited tendencies are too weak. But in the lower animal grades and in the vegetal world the courting of life and the shrinking from death go on without conscious intelligence, as the blades of grass in a meadow or the clustering leaves upon a tree compete with one another for the maximum of exposure to sunshine until perhaps stout boughs and stems are warped or twisted in the struggle. Among invertebrates, even when we get so high as lobsters and cuttlefish, the consciousness attendant upon the seizing of prey and the escape from enemies probably does not extend beyond the facts within the immediate sphere of vision. Even among those ants that have marshalled hosts and grand tactics there is doubtless no such thing as meditation of death. Passing to the vertebrates, it is not until we reach the warm-blooded birds and mammals that we find what we are seeking. Among sundry birds and mammals we see indications of a dawning recognition of the presence of death. An early manifestation is the sense of bereavement when the maternal instinct is rudely disturbed, as in the cow mourning for her calf. This feeling goes a little way, but not a great way, beyond the sense of physical discomfort, and is soon relieved by milking. Much more intense and abiding is the feeling of bereavement among birds that mate for life, and among the higher apes, and it reaches its culmination in the dog, whose intelligence and affections have been so profoundly modified through his immensely long comradeship with man. Nowhere in literature do we strike upon a deeper note of pathos than in Scott's immortal lines on the dog who starved while watching his young master's lifeless body, alone upon a Highland moor: —

"How long didst thou think that his silence was slumber?
When the wind stirred his garment, how oft didst thou start!"

Yet even this devoted creature could have carried his thoughts but little way toward the point reached by our dreaming savage with his incipient ghost-world. More power of abstraction and generalization was needed. While the sight of the killing of a fellow-creature may arouse violent terror in the higher mammals below man, there is nothing to indicate that the sight of the dead body awakens in the dumb spectator any general conceptions in which his own ultimate doom is included. The .only feeling aroused seems to vary between utter indifference and faint curiosity. Professor Shaler makes a statement of cardinal importance in this connection when he says : " If we should seek some one mark which, in the intellectual advance from the brutes to man, might denote the passage to the human side, we might well find it in the moment when it dawned on the nascent man that death was a mystery which he had in his turn to meet."[1]

It is therefore interesting to note that the first approaches, albeit remote ones, toward a realizing sense of death occur among those animals in which the beginnings of family life have been made, and the habitual exercise of altruistic emotions helps to widen the intelligence and facilitate the appropriation to one's self of the experiences of one's comrades and mates. Such is the case with permanently mated birds and with the higher apes, while the case of the dog, exceptional as it is through his acquired dependence upon man, has similar implications. Now I have elsewhere proved and repeatedly illustrated that the leading peculiarity which distinguished man's apelike progenitors from all other creatures was the progressive increase in the duration of infancy, which was a direct consequence of expanding intelligence, and was moreover the immediate cause of the genesis of the human family and of human society. It appears now that the realizing sense of death, such as we find it in untutored men of primitive habits of thought, has originated in the selfsame circumstances which have wrought the mighty change from gregariousness to sociality, from the general level of mammalian existence to the unique level of humanity. I have elsewhere called attention to the profoundly interesting fact that the notion of an Unseen World beyond that in which we lead our daily lives is coeval with the earliest beginnings of Humanity upon our planet. We may now observe that it adds greatly to the interest and to the significance of this fact, when we find that the very circumstances which tended to single out our progenitors, and raise them from the average mammalian level into Manhood, tended also to make them realize the problem of death and meet it with a solution. The grouping of facts now begins to make it appear that this primeval solution was but the natural outcome of the whole cosmic process that had gone before; that when nascent Humanity first eluded the burden of the problem by rising above it, this was but part and parcel of the unprecedented cosmic operation through which man's Humanity was developed and declared. The long and cumulative play of cause and effect which wrought the lengthening of the period of helpless babyhood and the correlative maternal care, and which thus differentiated the non-human horde of primates into a group of human clans, was attended by a strong development of the sympathetic feelings as it vastly increased the mutual dependence among individuals. During the same period the gradual acquirement of articulate speech was accompanied by a great increase in the powers of abstraction and generalization. These new capacities were applied to the interpretation of death, just as they were applied to all other things; and thus, in the very process of becoming human, our progenitors arose to the consciousness of death as something with which humanity has always and everywhere to reckon. From the earliest and most rudimentary stages of the process, however, the conception of death was not of an event which puts an end to human individuality, but of an event which human individuality survives. If we look at the circumstances of the genesis of mankind purely from the naturalist's point of view, it cannot fail to be highly significant that the mental attitude toward death should from the first have assumed this form, that the human soul should from the start have felt itself encompassed not only by the endless multitude of visible and tangible and audible things, but also by an Unseen World. In view of this striking fact it is of small moment that the earliest generalizations which in course of time developed into a world of ghosts and demons were grotesquely erroneous. Primitive theorizing is sure to be faulty and in the light of later knowledge comes to seem absurd and bizarre. Such has been in modern days the fate of the savage's ghost-world, along with the Ptolemaic astronomy, the doctrine of signatures, and many another sample of the "wisdom of the ancients." But the fact that primitive man misstated his relation to the Unseen World in no wise militates against the truth of his assumption that such a world exists for us.

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[1] Shaler, *The Individual*, p. 194.

To this question as to the truth of the assumption I shall return in the sequel. We have very briefly sketched the manner of its origination, and here we may leave this part of our subject with the remark that the belief in a future life, in a world unseen to mortal eyes, is not only coeval with the beginnings of the human race but is also coextensive with it in all its subsequent stages of development. It is in short one of the differential attributes of humanity. Man is not only the primate who possesses articulate speech and the power of abstract reasoning, who is characterized by a long period of plastic infancy and a corresponding capacity for progress, who is grouped in societies of which the primordial units were clans ; he is not only all this, but he is the creature who expects to survive the event of physical death. This expectation was one of his acquisitions gained while attaining to the human plane of existence, and the interesting question in the natural history of man is whether it is to be regarded as a permanent acquisition, or is rather analogous to the organ that subserves, perhaps through long ages, an important but temporary purpose, after the fulfilment of which it dwindles into a rudiment neglected and forgotten.

I do not overlook the existence of divers theological systems in which the attitude toward a future life is very different from that with which our Christian education has made us familiar. We sometimes hear such systems cited as exceptions to the alleged universality of the human belief in immortality. The Buddhist looks forward through myriads of successive sentient existences to a culminating state of

Nirwana, which if not actual extinction is at least complete quiescence, the absolute zero of being. It hardly needs saying, however, that Buddhistic theology, though it may have arrived at such a zero through long flights of metaphysical reasoning, is nevertheless based in all its foundations upon the primitive belief in man's survival of death. Sometimes it is said that the Jews of the Old Testament times had no proper conception of immortality. It can hardly be maintained, however, that such stories as that of the conversation at Endor between the living Saul and the dead Samuel could emanate from a people destitute of belief in a life after death. In point of fact ancient Jewish thought abounds in traces of the primitive ghost-world. It is only by contrast with the glorious and inspiring Christian development of the belief in immortality that the earlier dispensation seems so jejune and meagre in its faith. There was little to arouse religious emotion in the dismal world of flitting shadows, the Sheol or Hades from which the Greek hero would so gladly have escaped, even to take the most menial position in all the sunlit world. Greek and Hebrew thought, in what we call the classic ages, stood alike in need of religious revival. The mythic lore of the Greek mind had flowered luxuriantly in æsthetic fancies, while the spiritual life of Judaism languished amid strict obedience to forms and precepts. The far-reaching thoughts of Greek philosophers and the lofty ethics of Hebrew preachers were divorced from the primitive ghost-world, even as the mental processes of the modern scholar are separated by a great gulf from those of the woman who comes to scrub the floor. The advent of Christianity fused together the various elements. The doctrine of a future life was endowed with all the moral significance that Jewish thought could give to it, and with all the mystic glory that Hellenic speculation could contribute, so that the effect upon men was that of a fresh revelation of life and immortality through the gospel. Grotesque and hideous features also were brought in from the ghost-worlds of the classic ages, as well as from that of the Teutonic barbarians, and the result is seen in mediæval Christianity. At no other time, perhaps, has the Unseen World played such a leading part in men's minds as in the twelfth and thirteenth centuries of our Christian era, in the age that witnessed the culmination of sublimity in church architecture, in the society whose thought found comprehensive expression in the " Summa " of St. Thomas, as the thought of our times is expressed in Spencer's " First Principles," in an intellectual atmosphere which just as it was about passing away was depicted for all coming time in the poem of Dante. It was a time of spiritual awakening such as mankind had never before witnessed, but it was also an age of new problems, an age wherein the seeds of revolt were thickly germinating. The nature and constitution of the Unseen World had been too rashly and too elaborately set forth in theorems born of the slender knowledge of primitive times, and the growing tendency to interrogate Nature soon led to conclusions which broke down the old edifice of thought. In the sixteenth century came Copernicus and administered such a shock to the mind as even Luther's defiance of the papacy scarcely equalled. In recent days, when Bishop Wilberforce reckoned without his host in trying to twit Huxley with his monkey ancestry, our minds were getting inured to all sorts of audacious innovations, so that they did not greatly disturb us. For its unsettling effects upon time-honoured beliefs and mental habits the Darwinian theory is no more to be compared to the Copernican than the invention of the steamboat is to be compared to the voyages of Columbus. We are in no danger of overrating the bewilderment that was wrought by the discovery that our earth is not the physical centre of things, and that the sun apparently does not exist for the sole purpose of giving light and warmth to man's terrestrial habitat. We need not wonder that in conservative Spain scarcely a century ago the University of Salamanca prohibited the teaching of the Newtonian astronomy. We need not wonder that Galileo should have been commanded to hold his tongue on a topic that seemed to cast discredit upon the whole theology that assumes man to be the central object of the Divine care.

This unsettling of men's minds was of course indefinitely increased by the revolt of Descartes against the scholastic philosophy, by Newton's immense contributions to physics, and by such discoveries as those of Harvey, Black, and Lavoisier, which showed by what methods *truth* could be obtained concerning Nature's operations, and how different such methods were from those by which the accepted systems of theology had been built up. The result has been wholesale scepticism directed against everything whatever that now exists or has ever existed in the shape of an ancient belief. This result was first reached in France about the middle of the eighteenth century, when the thoughts of Locke and Newton were eagerly absorbed in a community irritated beyond endurance by social injustice, and in which the church had done much to forfeit respect. Thus came about that violent outbreak of materialistic atheism which, in spite of its generous aims and many admirable achievements, is surely one of the most mournful episodes in the history of human thought. The French philosophers set an example to three generations; the note struck by Diderot and Buffon and D'Alembert continued to resound until the scientific horizon had become radiant in every quarter with the promise of a brighter day, and its echoes have not yet died. It was but lately that the voice of La Mettrie was heard again from the lips of Strauss and Büchner, and even to-day we may sometimes be entertained by a belated eighteenth century naturalist who is fully persuaded that his denial of human immortality is an inevitable corollary from the doctrine of evolution. Indeed the progress of scientific discovery has been so rapid since the time of Diderot, its achievements have been so vast, its results so multifarious and so dazzling, that it has well-nigh absorbed the attention of the foremost minds. The dogmas of theology seem stale and empty, the speculations of metaphysics vain and unprofitable, in comparison with the fascinating marvels of chemistry and astronomy, of palæontology and spectrum analysis; and it is natural that we should rejoice over the methods of research that are enabling us thus to wrest from Nature a few of her long guarded secrets, and to make up our minds to have nothing to do with conclusions that are not obtained or at least verified by such scientific methods. Daily we hear sounded the praises of observation, of experiment, of comparison; we are warned against long deductions, since the strength of any chain of arguments is measured by that of its weakest link, and experience is perpetually teaching us, to our vexation and chagrin, that what reason says must be so is not so, that facts will not fit hypothesis. The more things we try to explain, the better we realize that we live in a world of unexplained residua. Away, then, with all so-called truths that cannot be tested by weights and measures, or other direct appeals to the senses! Your modern philosopher will have nothing of them. His system is composed, from start to finish, of scientific theorems. As for the higher speculations, the deeper generalizations, in which philosophy has been wont to indulge concerning the aim and meaning of existence, he waves them away as profitless or even mischievous. The world is full of questions as pressing as they are baffling. As I once heard Herbert Spencer say, "You cannot take up any problem in physics without being quickly led to some metaphysical problem which you can neither solve nor evade." It was in order to secure philosophic peace of mind that Auguste Comte undertook to build up what he called Positive Philosophy, in which the existence of all such problems was to be complacently ignored, — much as the ostrich seeks escape from a dilemma by burying its head in the sand. In a far more reverent and justifiable spirit the agnostic like Huxley or Spencer acknowledges the limitations of the human mind and builds as far as he may, leaving the rest to God.

In the fervour of this modern reliance upon scientific methods, we are warned with especial emphasis against all humours and predilections which we may be in danger of cherishing as human beings. In a new sense of the words we are reminded that "the heart of man is deceitful and desperately wicked," and if any belief is especially pleasant or consoling to us, forthwith does Science lay upon us her austere command to mortify the flesh and treat the belief in question with exceptional disfavour and suspicion. Thus there has grown up a kind of Puritanism in the scientific temper which, while announcing its unalterable purpose to follow Truth though she lead us to Hades, takes a kind of grim satisfaction in emphasizing the place of destination.

Now there can be no sort of doubt that this rigid and vigorous scientific temper is in the main eminently wholesome and commendable. In the interests of intellectual honesty there is nothing which we need more than to be put on our guard against allowing our reasoning processes to be warped by our feelings. Nevertheless in steering clear of Scylla it would be a pity to tumble straight into the maw of Charybdis, and it behooves us to ask just how far the canons of scientific method are competent to guide us in dealing with ultimate questions. Science has given us so many surprises that our capacity for being shocked or astounded is well-nigh exhausted, and our old unregenerate human nature has been bullied and badgered into something like humility; so that now, at the end of the greatest and most bewildering of centuries, we may fitly pause for a moment and ask how fares it, in these exacting days, with that Unseen World which man brought with him when he was first making his appearance on our planet? And what has science to say about that time-honoured belief that the human soul survives the death of the human body?

The position that science irrevocably condemns such a belief seems at first sight a very strong one and has unquestionably had a good deal of weight with many minds of the present generation. Throughout the animal kingdom we never see sensation, perception, instinct, volition, reasoning, or any of the phenomena which we distinguish as mental, manifested except in connection with nerve-matter arranged in systems of various degrees of complexity. We can trace sundry relations of general correspondence between the increasing manifestations of intelligence and the increasing complications of the nervous system. Injuries to the nervous structure entail failures of function, either in the mental operations themselves or in the control which they exercise over the actions of the body; there is either psychical aberration, or loss of consciousness, or muscular paralysis. At the moment of death, as soon as the current of arterial blood ceases to flow through the cerebral vessels, all signs of consciousness cease for the looker-on; and after the nervous system has been resolved into its elements, what reason have we to suppose that consciousness survives, any more than that the wetness of water should survive its separation into oxygen and hydrogen?

So far as our terrestrial experience goes there can be but one answer to such a question. We have no more warrant in experience for supposing consciousness to exist without a nervous system than we have for supposing the properties of water to exist in a world destitute of hydrogen and oxygen. Our power of framing conceptions is narrowly limited by experience, and when we try to figure to ourselves the conditions of a future life we are either hopelessly baffled at the start or else we fall back upon grossly materialistic imagery. The savage's ghost-world is a mere repetition of the fights and hunts with which he is familiar. The early Christians looked forward to a speedy resurrection from Sheol, followed by an endless bodily existence upon a renovated earth. Dante's pictures of the Unseen World are often so intensely materialistic as to seem grotesque in our more truly spiritual age. Popular conceptions of heaven to-day abound in symbolism that is confessedly a mere reflection from the world of matter; insomuch that persons of sufficient culture to realize the inadequacy of these popular images are wont to avoid the difficulty by refraining from putting their hopes and beliefs into any definite or describable form. Among such minds there is a tacit agreement that the unseen world must be purely spiritual in constitution, yet no mental image of such a world can be formed. We are all agreed that life beyond the grave would be a delusion and a cruel mockery without the continuance of the tender household affections which alone make the present life worth living; but to imagine the recognition of soul by soul apart from the material structure in which we have known soul to be manifested, apart from the look of the loved face, the tones of the loved voice, or the renewed touch of the long vanished hand, is something quite beyond our power. Even if you try to imagine your own psychical activity as continuing without the aid of the physical machinery of sensation, you soon get into unmanageable difficulties. The furniture of your mind consists in great part of sensuous images, chiefly visual, and you cannot in thought follow yourself into a world that does not announce itself to you through sense impressions. From all this it plainly appears that our notion of the survival of conscious activity apart from material conditions is not only unsupported by any evidence that can be gathered from the world of which we have experience but is utterly and hopelessly inconceivable.

The argument here summarized is in no way profound or abstruse; it is extremely obvious, and as its propositions cannot well be controverted, it has had great weight with many people. I dare say it may be held responsible for the larger part of contemporary scepticism as to the future life. People have grown accustomed to demanding scientific support for doctrines, whereas this doctrine is not only destitute of scientific support but lands us in inconceivabilities; is it not, then, untenable and absurd? Such is the common argument. There are those who seek to meet it with inductive evidence of the presence of disembodied spirits or ghosts which hold direct communication only with certain specially endowed persons known as mediums. Concerning such inductive evidence it may be said that very little has as yet been brought forward which is likely to make much impression upon minds trained in investigation. If its value as evidence were to be conceded, it would seem to point to the conclusion that the grade of intelligence which survives the grave is about on a par with that which in the present life we are accustomed to shut up in asylums for idiots. On the whole the mediumistic ideas and methods are frankly materialistic, their alleged communications with the other world are through sights and sounds, and if their pretensions could be sustained the result would be simply the rehabilitation of the primitive ghost-world. Their theory of things moves on so low a plane as hardly to merit notice in a serious philosophic discussion.

To return to the argument that the doctrine of the survival of conscious activity apart from material conditions is unsupported by experience and is inconceivable, we may observe that it is inconceivable just because it is entirely without foundation in experience. Our powers of conception are narrowly determined by the limits of our experience, and when that experience has never furnished us with the materials for framing a conception we simply cannot frame it. Hence we cannot conceive of the conscious soul as entirely dissociated from any material vehicle.

Now we are prepared to ask, How much does this famous argument amount to, as against the belief that the soul survives the body? The answer is, Nothing! absolutely nothing. It not only fails to disprove the validity of the belief, but it does not raise even the slightest *prima facie* presumption against it. This will at once become apparent if we remember that human experience is very far indeed from being infinite, and that there are in all probability immense regions of existence in every way as real as the region which we know, yet concerning which we cannot form the faintest rudiment of a conception. Within the past century the study of light and other radiant forces has furnished us with a suggestive object-lesson. The luminiferous ether combines properties which are inconceivable in connection. How curious to think that we live and move in an ocean of ether in which the particles of all material things are floating like islands! But how amazing to learn that this ocean of ether is also an adamantine firmament! Is not this sheer nonsense? an ocean firmament of ether-adamant! Yet such seems to be the fact, and our philosophy must make the best of it. Now suppose that all this world were crowded with disembodied souls, an infinite throng most aptly called "the majority," a thousand or more on every spot in space as broad as the point of a cambric needle, in what way could we become aware of their existence? Clearly in no way, since we have no organ or faculty for the perception of soul apart from the material structure and activities in which it has been manifested throughout the whole course of our experience. There we will suppose are the countless millions, the existence of any one of whom, could we detect it, would suffice to demonstrate the doctrine of a future life, and yet, for lack of the requisite means of communication, all this evidence is inaccessible. Such an illustration shows that "the entire absence of testimony does not even raise a negative presumption except in cases where testimony is accessible." The reason is obvious. Until we can go wherever the testimony may be, we are not entitled to affirm that there is an absence of testimony. So long as our knowledge is restricted by the conditions of this terrestrial life, we are not in a position to make negative assertions as to regions of existence outside of these conditions. We may feel quite free, therefore, to give due weight to any considerations which make it probable that consciousness survives the wreck of the material body.

We are now in a position to see the fallacy of Moleschott's often-quoted aphorism, "No thought without phosphorus!" When this saying was a new one, there were worthy people who felt that somehow it was all over with man's immortal soul. With phosphorus you light your candle, and with phosphorus you discover Neptune and write the Fifth Symphony; how charmingly simple and convincing! And yet was anything save a bit of rhetoric really gained by singling out phosphorus among the chemical constituents of brain tissue rather than nitrogen or carbon? Suppose the dictum had been, "No thought without a brain." The obvious answer would have been, "If you refer to the present life, most erudite professor, your remark is true, but hardly novel or startling; if you refer to any condition of things subsequent to death, pray where did you obtain your knowledge?"

Nevertheless this point cannot be disposed of simply by exhibiting the flaw in Moleschott's rhetoric. His remark rests upon the assumption that conscious mental phenomena are products of the organic tissues with which they are associated. This is of course the central stronghold of materialism. A century ago the case was very boldly put when we were asked to believe that the brain secretes thought as the liver secretes bile. Nobody to-day would think of making such a comparison, but it is more cautiously stated that consciousness is a "function" of the brain, or at all events of the nervous system, even as bile-making is a function of the liver. Before we yield any modicum of assent to this statement we may observe that "function" is a word with a wide range of meaning, and we must insist upon some closer definition. Here materialism calls to its aid the discovery of the correlation and equivalence of forces, one of the most stupendous achievements of our century. We now know that heat and light and electricity and actinism are not forces generically distinct and isolated each from the others. All are specific modes of molecular motion, transformable one into another at any moment as naturally as a cloud condenses into raindrops. Any such molecular motion, moreover, may come from the arrested visible motion of a mass, and may in turn be liberated so as to resume the form of visible motion, as when an electric current is transformed into the onward movement of the trolley car. The change in our conception of Nature that has been wrought by this wonderful discovery is more profound than all changes that went before. The balance in the hands of the chemist had already proved that no matter is ever lost but only transformed, and that every material form at any moment visible owes its existence to the metamorphosis of some previous form. So now it was further shown that the myriad properties or qualities of matter are simply the expression of myriads of activities which are all in a final analysis motions; that no motion is ever lost but only transformed, and that every kind of motion at any moment perceptible — whether in the form of movement through space, or of light, or heat, or electricity, or the actinism that builds up the green stuff in the leaves of plants — owes its existence to the metamorphosis of some previous kind of motion. Every living organism is a marvellous aggregate of divers forms of matter performing divers characteristic motions, and the sum total of these motions is the whole of life, as regarded purely on its physical side. When we take food we bring into the system sundry nitrogenous and hydrocarbon compounds, each of which is alive with little energies or latent capacities for certain kinds of motion. The oxygen of the air, especially in its unstable form of ozone, is a powerful inciter of chemical motions, and when we breathe it in, the little latent capacities presently become actual motions. Some of them are realized in the rhythmical movements of heart and lungs, some in the undulations that sustain the animal temperature, some in the formation of the tiny drops that collect in a secreting gland, some in the repair of tissue by the substitution of new complex molecules for old ones that are broken down, some in the contraction of a group of muscles, some in the changes within the substance of nerve that accompany conscious thought, sensation, and volition. Ah, yes, here we come to it at last! We do not doubt that all these myriad motions are members in a series of transformations, wherein the appearance of each results from the disappearance of its predecessors. We have neither the instruments nor the calculus to prove this in the infinite multitude of details, but the general theory has been so completely established wherever it is accessible to instruments and calculus that we can have no hesitation in granting its universality wherever matter and motion are concerned in any shape or amount. No scientific man will for a moment doubt that the little vibratory discharge between cerebral ganglia which accompanies a thought is one member in a series of molecular motions that might be measured and expressed in terms of quantity if we only possessed an apparatus sufficiently delicate and subtle.

Now if such is the case with the little physical motion within the brain, how is it with the accompanying thought? Does the correlation obtain between physical motions and conscious feelings? Are states of consciousness links in the Protean series of motions, in such wise that the vibration within the brain produces the thought or feeling? In other words is the thought or feeling merely a transformed vibration? Does a certain amount of vibration perish to be replaced by an exact equivalent in the shape of thought? and then does the thought perish in the act of giving place to other vibrations which end in a visible motion of muscles? as when, for example, you hear the sound of a bell and start toward the door.

On this point there has been much confusion of ideas. When I put the question to Tyndall in conversation, nearly thirty years ago, he seemed to think that there must be some such completeness of correlation between the physical and the psychical; but his mind was not at ease on the subject. Herbert Spencer, in his "First Principles," rather cautiously took the same direction and tried to show how a certain amount of motion might be transformable into a certain amount of feeling. He observed that the consciousness of effort or muscular strain in lifting a heavy weight is more intense than in lifting a light weight, and that when a loud sound sets up atmospheric vibrations of great amplitude the shock to our auditory consciousness is correspondingly greater than in the case of a gentle sound which sets up vibrations of small amplitude. But when he comes to the inner regions of thought and emotion which are not reached by percussion and strain, he is less successful in finding illustrations. It is especially worthy of note that in the final edition of "First Principles," published in this year 1900 and in Spencer's eighty-first, he goes very far toward withdrawing from his original position, while in his Preface he calls attention to this change as one of the most important in the book. In my "Cosmic Philosophy," published in 1874, I maintained that to prove the transformation of motion into feeling or of feeling into motion is in the very nature of things impossible. In order to be convinced of this, let us go back a few years and ask how the great doctrine of the correlation of forces became established. Its first absolute verification occurred about 1846, when Dr. Joule showed "that the fall of 772 lbs. through one foot will raise the temperature of a pound of water one degree of Fahrenheit."[1] When this was proved it gave us the mechanical equivalent of heat, and the theory acquired a truly scientific character. Similar quantitative correlations were established in the case of heat and chemical action by Dulong and Petit, and in the case of chemical action and electricity by Faraday. The truth of the theory is wholly a question of quantitative measurement. Now you can measure heat, you can measure electricity, and since the action of nerves in all probability consists of undulatory motions it is to some extent measurable, and doubtless would be completely measurable had we the means. But when you come to thoughts and emotions, I beg to know how you are going to work to give an account of them in foot-pounds! It is not simply that we have *no* means at hand, no calculus equal to the occasion; the thing is absurd on its face. It is as true to-day as it was in the time of Descartes that thought is devoid of extension and cannot be submitted to mechanical measurement.

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[1] Herbert Spencer, *First Principles* (final ed.), p. 185.

It appears to me, therefore, that what we should really find, if we could trace in detail the metamorphosis of motions within the body, from the sense-organs to the brain, and thence outward to the muscular system, would be somewhat as follows: the inward motion, carrying the message into the brain, would perish in giving place to the vibration which accompanies the conscious state; and this vibration in turn would perish in giving place to the outward motion, carrying the mandate out to the muscles. If we had the means of measurement we could prove the equivalence from step to step. But where would the conscious state, the thought or feeling, come into this circuit? Why, nowhere. The physical circuit of motions is complete in itself; the state of consciousness is accessible only to its possessor. To him it is the subjective equivalent of the vibration within the brain, whereof it is neither the cause nor the effect, neither the producer nor the offspring, but simply the concomitant. In other words the natural history of the mass of activities that are perpetually being concentrated within our bodies, to be presently once more disintegrated and diffused, shows us a closed circle which is entirely physical, and in which one segment belongs to the nervous system. As for our conscious life, that forms no part of the closed circle but stands entirely outside of it, concentric with the segment which belongs to the nervous system.

These conclusions are not at all in harmony with the materialistic view of the case. If consciousness is a product of molecular motion, it is a natural inference that it must lapse when the motion ceases. But if consciousness is a kind of existence which within our experience accompanies a certain phase of molecular motion, then the case is entirely altered, and the possibility or probability of the continuance of the one without the other becomes a subject for further inquiry. Materialists sometimes declare that the relation of conscious intelligence to the brain is like that of music to the harp, and when the harp is broken there can be no more music. An opposite view, long familiar to us, is that the conscious soul is an emanation from the Divine Intelligence that shapes and sustains the world, and during its temporary imprisonment in material forms the brain is its instrument of expression. Thus the soul is not the music, but the harper; and obviously this view is in harmony with the conclusions which I have deduced from the correlation of forces.

Upon these conclusions we cannot directly base an argument sustaining man's immortality, but we certainly remove the only serious objection that has ever been alleged against it. We leave the field clear for those general considerations of philosophic analogy and moral probability which are all the guides upon which we can call for help in this arduous inquiry. But it may be suggested at this point that perhaps our argument has acquired a wider scope than was at first contemplated. Consciousness is not peculiar to man, but is possessed in some degree by the greater portion of the animal kingdom. Among the higher birds and mammals the amount of conscious life is very considerable, and here too it must be argued that consciousness is not a product of molecular motion in the nervous system but its concomitant. The same argument which removes the objection to immortality for man removes it also for an indefinite number of animal species. What, then, is to be said of the reasonableness of supposing a future life for sundry lower animals? and if we were to reach a negative conclusion in their case, while reaching a positive conclusion in the case of man, on what principle are we to draw the line? Sometimes we hear this question propounded as a difficulty in the Darwinian theory of man's origin. How could immortal man have been produced through heredity from an ephemeral brute?

The difficulty is one of the sort which we are apt to encounter when we try to designate absolute beginnings and to mark off hard and fast lines, for in Nature there are no such things.

Voltaire asked the same kind of question more than a hundred years before Darwinism had been heard of. When does the immortal soul of the human individual come into existence? Is it at the moment of conception, or when the new-born babe begins to breathe, or at some moment between, or even perhaps at some era of early childhood when moral responsibility can be said to have begun? Some of the answers to these questions would transform an ephemeral creature into an immortal one in the same person. The most proper answer is a frank confession of ignorance. Whether it be in the individual or in the race, we cannot tell just where the soul comes in. A due heed to Nature's analogies, however, is helpful in this connection. The maxim that Nature makes no leaps is far from true. Nature's habit is to make prodigious leaps, but only after long preparation. Slowly rises the water in the tank, inch by inch through many a weary hour, until at length it overflows and straightway vast systems of machinery are awakened into rumbling life. Slowly grows the eccentricity of the ellipse as you shift its position in the cone, and still the nature of the curve is not essentially varied, when suddenly, presto! one more little shift, and the finite ellipse becomes an infinite hyperbola mocking our feeble powers of conception as it speeds away on its everlasting career. Perhaps in our ignorance such analogies may help us to realize the possibility that steadily developing ephemeral conscious life may reach a critical point where it suddenly puts on immortality.

If this suggestion is a sound one, we must probably regard the conscious life of animals as only the ephemeral adumbration of that which comes to maturity in man. The considerations adduced this evening must convince us that we are at perfect liberty to treat the question of man's immortality in the disinterested spirit of the naturalist. In the course of evolution there is no more philosophical difficulty in man's acquiring immortal life than in his acquiring the erect posture and articulate speech. In my little book "The Destiny of Man" I insisted upon the dramatic tendency or divine purpose indicated in the long cosmic process which has manifestly from the outset aimed at the production and perfection of the higher spiritual attributes of humanity. In another little book, "Through Nature to God," I called attention to the fact that belief in an Unseen World, especially associated with the moral significance of life, was coeval with the genesis of Man, and had played a predominating part in his development ever since, and I argued that under such circumstances the belief must be based upon an eternal reality, since a contrary supposition is negatived by all that we know of the habits and methods of the cosmic process of Evolution. No time is left here to repeat these arguments, but I hope enough has been said to indicate the probability that the patient study of evolution is likely soon to supply the basis for a Natural Theology more comprehensive, more profound, and more hopeful than could formerly have been imagined. The Nineteenth Century has borne the brunt, the Twentieth will reap the fruition.

NOTES

A. — MEDITATIONS OF A SAVAGE

IN the presence of the great mystery of existence, the thoughts of the untutored savage are not always so very unlike those of civilized men, as we may see from the following pathetic words of a Kafir, named Sekese, in conversation with a French traveller, M. Arbrouseille, on the subject of the Christian religion: —

"Your tidings," said this uncultivated barbarian, "are what I want, and I was seeking before I knew you, as you shall hear and judge for yourself. Twelve years ago I went to feed my flocks; the weather was hazy. I sat down upon a rock and asked myself sorrowful questions; yes, sorrowful, because I was unable to answer them. Who has touched the stars with his hands — on what pillars do they rest, I asked myself. The waters never weary, they know no other law than to flow without ceasing from morning till night and from night till morning; but where do they stop, and who makes them flow thus? The clouds also come and go, and burst in water over the earth. Whence come they — who sends them? The diviners certainly do not give us rain; for how could they do it? and why do not I see them with my own eyes when they go up to heaven to fetch it? I cannot see the wind; but what is it? who brings it, makes it blow and roar and terrify us? Do I know how the corn sprouts? Yesterday there was not a blade in my field, to-day I returned to the field and found some; who can have given to the earth the wisdom and the power to produce it? Then I buried my head in both my hands." — Cited in PICTON, *Mystery of Matter*, p. 222.

B. — THE NAME *GOD*

None of the dictionaries offer a satisfactory explanation of the word *God*. It was once commonly supposed to be related to the adjective *good*, but Grimm long ago showed that this connection is, to say the least, very improbable. It has also been sought to identify it with Persian *Khodâ*, from Zend *qvadata*, Skr. *svadata*, Lat. *a se datus*, in which the idea is that of self-existence; but this fanciful etymology was exploded by Aufrecht. The arrant guesswork of Donaldson, who would connect *God* with καλός, and θεός with τίθημι (New Cratylus, p. 710), scarcely deserves mention in these days. Among the more scientific philologists of our time, August Fick, in treating of the "Wortschatz der germanischen Spracheinheit," simply refers *God* to a primitive Teutonic *gutha*, and says no more about it. (Vergl. Woerterbuch der indogermanischen Sprachen, III. 107.) He is followed by Skeat (Etymological Dictionary, p. 238), who adds that there is "no connection with *good*." Eduard Müller says: "So bedenklich die zusammenstellung mit *good*, so fraglich ist doch auch noch die urverwandtschaft mit pers. *Khodâ* gott, oder skr. *gûdha* mysterium, oder skr. *guddha* purus; Heyne: ‘als sich verhüllender, unsichtbarer, vgl. skr. *guh* für *gudh* celare.'" (Woerterbuch der englischen Sprache, p. 456.)

Max Müller has much more plausibly suggested that *God* was formerly a heathen name for the Deity, which passed into Christian usage, like the Latin *Deus*. (Science of Language, 6th ed. II. 317.) Following this hint, I suggested, several years ago (North Amer. Review, Oct. 1869, p. 354), that *God* is probably identical with *Wodan* or *Odin*, the name of the great Northern deity, the chief object of the worship of our forefathers. This relation of an initial *G* to an initial *W* is a very common one; as for example *Guillaume* and *William*, *guerre* and *war*, *guardian* and *warden*, *guile* and *wile*. The same thing is seen in Armorican *guasta* and Ital. *guastare*, as compared with Lat. *vastare*, Eng. *waste;* and in the Eng. *quick*, Goth. *quivs*, Lat. *vivus*. In Erchempert's Historia Langobardorum, 11, Pertz, III. 245, we find *Ludoguicus* for *Ludovicus*. Not only is this relation a common one, but there are plenty of specific instances of it in the case of *Wodan*. In Germany we have the town names of *Godesberg*, *Gudenberg*, and *Godensholt*, all derived from *Wodan*. In the Westphalian dialect *Wednesday* ("day of Wodan") is called *Godenstag* or *Gunstag;* in Nether-Rhenish, *Gudenstag;* in Flemish, *Goenstag*. See Thorpe, Northern Mythol. I. 229; Taylor, Words and Places, 323; and cf. Grimm, Gesch. der deutschen Sprache, 296. The Westphalian Saxons wrote both *Guodan* and *Gudan*. *Odin* was also called *Godin* (Laing, Heimskringla, I. 74), and Paulus Diaconus tells us that the Lombards pronounced *Wodan* as *Guodan*. In view of such a convergence of proofs, I am surprised that attention was not long ago called to this etymology.

Wodan was originally the storm-spirit or animating genius of the wind, answering in many respects to the Greek Hermes and the Vedic Sarameyas. See my Myths and Myth-Makers, 26, 43, 44, 47, 91, 168, 276; and cf. Mackay, Religious Development of the Greeks and Hebrews, i. 260–273.

INDEX

INDEX

Agassiz, Louis, his theistic objection to Darwinism, 160, 162; argument from design in his *Essay on Classification*, 177.

Agnostics, unintelligent use of the term, 90, 91; and first cause, 339.

Agriculture as a factor in the development of society, 56, 57.

Ahriman, as accountable for sin in the world, 179, 234; as the serpent in Eden, 225, 226; idea of the devil drawn largely from, 235.

Alembert, J. le R. d', atheism of, 331–333, 395.

Alexandria, comparatively modern aspect of its intellectual character before the Christian era, 139.

Allen, A. V. G., on Athanasian doctrine of the Trinity, 147.

Alphonso, king of Castile, criticises the creation, 232.

Altruism, finds its origin in the prolongation of infancy, 51, 318; in man less highly developed than intelligence, 51, 70; development of, through the family, 54; through the clan, 306; no intellectual element in its origin and development, 307, 308; shadowed forth in the protection of offspring, 317; in the establishment of maternal affection, 318, 320. *See* Morality and Ethics.

America, federal union in, 63.

American Political Ideas, on Roman adoption of Greek divinities, 137; on elimination of warfare, 208.

Anatomy, comparative, foundations of, laid in recent times, 124.

Anaxagoras, 139.

Ancestor worship, as the earliest form of religious worship, 136; mingling of, with nature worship, 136, 145; dominant in the development of Chinese, Japanese, and Roman religions, 137; the theism reached through the medium of, 150, 152, 170.

Animals, their shrinking from death, 384; their sense of bereavement, 385; future life of, 413.

Animism, and a quasi-human God, 349; of primitive man, comprises a theism and belief in an unseen world, 353.

Antagonism, element of, necessary to consciousness, 249–252.

Anthropomorphic theism, compared with cosmic theism, 98, 170; wide extent of, 171; of Paley and the Bridgewater treatises, 175, 183; cannot survive the test of modern knowledge, 186.

Anthropomorphism, must have a place in theism, 170, 173, 186, 351; in the present day, 173.

Apes, man differs little in structure but enormously in intellect from higher, 17, 18, 260; brain of, 31; infancy of manlike, 36; sense of bereavement in higher, 385.

Archæology, greatest achievements in, belong to the nineteenth century, 125.

Aristotle, his remark that nothing

INDEX

is out of place or interpolated in nature, 242, 251.
Art, evolution of, 41, 43.
Aryano Vaējo as the location of Eden, 225.
Asceticism condemned by Clement, 146.
Ascidian, degeneration of the species, 277.
Ascoli, G. I., his researches in philology, 125.
Astarte, a nature god, 140.
Astronomy, advance in, during the nineteenth century, 123; teaches the unity of nature, 241.
Athanasian Deity. *See* under Greeks.
Athanasius, and Augustine, 98; idea of God as conceived by, 106, 146; his doctrine of the Trinity, 147; theism of, 162, 186.
Atheism, condemned, 4, 5; its connection with materialism, 4; its presentation of the world of phenomena, 92, 93; in the nineteenth century, 128; as following the theism which places God outside his universe, 154; French, in the eighteenth century, 330–336, 394; in Romanist and Protestant countries, 331; its influence on succeeding generations, 395.
Atheist, name used as a term of abuse, 91.
Atoms, difficulty of conceiving the properties of, 347.
Aufrecht, Theodor, on derivation of the name God, 418.
Augustine, and Athanasius, compared, 98; his conception of Deity, 155; his doctrine of original sin, 155–157; his doctrine of total depravity, 180; theism of, cannot stand the test of modern knowledge, 186.
Australian, the, in mental and moral development is more like the animals than like civilized man, 49.
Automatism of repeated action, 293.
Baal, a nature god, 140.
Baby's idea of the appearance of his mother, used as an illustration, 383.
Baer, Ernst von, his formula of embryonic development, 197.
Beliefs tested by their power of resisting change, 189.
Bell, Sir Charles, his acceptance of the argument from design, 175.
Benevolence, absolute, of the Creator, as presented in the argument from design, 177–181.
Bereavement, manifestation of, in animals, as indicating some recognition of death, 385.
Berecynthian Mother, worship of, continued in worship of the Virgin Mary, 143.
Biblical philology, advance of, in the nineteenth century, 126.
Biology, modern, beginnings of, 124.
Birds, sense of bereavement in, 385.
Bitterness cannot exist without sweetness, 250.
Brain, growth of, in the ancestors of man, 17; consciousness and molecular motion in the, 30, 77, 344, 408–412; formation of, 31. *See* Cerebellum and Cerebrum.
Bridgewater treatises, anthropomorphic theism of, 175; arguments of, overthrown by theory of natural selection, 183.
Browning, Robert, his *Caliban*, 281.
Bruno, Giordano, persecution of, natural, 6.
Brute-inheritance as original sin, 72.
Büchner, Louis, echoes La Mettrie, 395.
Buddhist conception of immortality, 390.
Buffon, G. L. Leclerc, Comte de, character of his atheism, 331–333, 395.
Butler, Joseph, his philosophical writings classed among the glories of English literature, 335.

INDEX

Cabanis, P. J. G., his unscientific remark that the brain secretes thought, 77.

Caliban's philosophy, 281, 319.

Calvinism, contrasted with cosmic theism, 170; idea of God in, 238.

Carlyle, Thomas, his remark on "an absentee God," 151.

Cat, brain of, 31; its *vibrissæ* or organs of touch, 364.

Cause, legitimate use of the term, 160.

Cave-men, 37.

Cerebellum, action of, with regard to consciousness, 30; size of, in different animals, 31.

Cerebral differences between civilized man and savage, 31, 49.

Cerebrum, action of, with regard to consciousness, 30; size of, in different animals, 31; increase of surface, from action of natural selection, 36.

Chalmers, Thomas, his acceptance of the argument from design, 175.

Character, knowledge of sin essential to the formation of, 252; perfecting of, through evolution, 313.

Chemical science, advance in, has remodelled our conceptions of the universe, 123; teaches the unity of nature, 196, 241.

Chillingworth, William, his philosophical writings classed among the glories of English literature, 335.

Chlorophyll, importance of, to animal life, 272, 360.

Christ, kingdom of, on the earth, 84, 208.

Christ of Dogma, relation of the essay to a contemplated work on Christianity, 108, 109.

Christianity, as the message brought by the teachings of modern science, 73; as encrusted with pagan notions, 143; the result of its wide acceptance, 143; its theory of the existence of evil, 179.

Church, its opposition to the teachings of modern science, 5.

Civilization, when its progress became the dominant aspect of evolution, 18, 290; the working of evolution in, 43, 323; altruism and intellectual development in, compared, 51; place of warfare in, 51–55; clan stage of, 54; struggle for existence in, 278. *See* Society.

Clan, development of, from the family, 54, 302; ethical sentiment in, 54, 302, 305, 306.

Clement of Alexandria, God as conceived by, 98, 99, 146, 162, 170.

Clifford, W. R., on a universe of mind-stuff, 200, 201.

Codfish, multiplication of, 315.

Commerce as a factor in the development of society, 57.

Comte, Auguste, his critical turn of mind, 232; gulf between his philosophy and Spencer's, 237; metaphysical problems ignored in his *Positive Philosophy*, 396.

Conceptions, our power of framing, limited by our experience, 187, 344–348, 399, 402.

Concord School of Philosophy, the *Idea of God* delivered before the, 89; *Destiny of Man* delivered before the, 99.

Condorcet, M. J. A. N. Caritat, Marquis de, atheism of, 331–333.

Conflict, so-called, between religion and science, 158–168; origin of, traced to Augustine theism, 162; origin of, traced to the primitive idea of volition in physical phenomena, 164–166; will disappear on the adoption of the idea of an ever-present God, 167; disappearance of, will be one of the greatest benefits ever conferred on humanity, 186.

INDEX

Conquest, without incorporation, 60; with incorporation, 61, 63.

Conscience, beginnings of, 263.

Consciousness, not the product of material particles, 27, 343, 344; dawning of, in the animal world, 28, 32; perception and determination of movement in, 29; the physical condition of the brain necessary for the manifestation of, 30; states of, and the Power which causes them, 201; exists by virtue of incessant change, 245–248; feature of discrimination in, 248–252; and molecular motion in the brain, 344, 408–412; survival of, apart from material conditions, inconceivable, 401, 402; relation between the nervous system and, is one of concomitance, 411, 413; in animals, 413.

Conservation of energy, 123.

Constancy of nature, 81.

Contrast, element of, necessary to consciousness, 249.

Copernican theory, and contemporary theology, 6; and revolution in man's view of his relation to the universe, 9, 393.

Correlation of forces and molecular motion in the brain, 343, 407–410.

Cosmic forces, mental conception of, must be symbolic, 192.

Cosmic process, phrase used by Huxley in a restricted sense as equivalent to natural selection, 216, 285; seeming wastefulness of, 276–280; Huxley on, 283; relation of, to moral ends, 283–286; traced in the development of man, 287–303; in the development of moral ideas, 304–308, 311–314, 322–324.

Cosmic Roots of Love and Self-Sacrifice, 269–324; essay on, slightly changed from the Phi Beta Kappa oration of June, 1895, 215; a reply to Huxley's Romanes lecture, 215.

Cosmic theism, adoption of the term, 98; contrast between anthropomorphic theism and, 98, 170; true character of, indicated, 102; presents the idea of God as immanent in the universe, 169; how affected by modern knowledge, 186.

Cosmical weather, 92.

Cow, maternal instinct of, 301, 385.

Creator, as presented in the argument from design, 177–181; his power conceived as limited by the vileness of matter, 180, 232, 236, 238; as the creator of evil, 252. *See* God and Deity.

Creeds, revolution in, caused by the advance of modern science, 128, 129; the origin and forms of, 230, 231.

Cumæan Sibyl, leaves of, as a simile of our limited comprehension of nature's laws, 220.

Cuvier, G. C. L. F. D., Baron, his classification of past and present forms of animal life, 124.

Dante Alighieri, position of man in his *Divine Comedy*, 3, 100; his description of the story of Nature as bound in a mystic volume, used as a simile of Nature's laws, 220, 221; quotation from his *Paradiso*, 270; his poetry unintelligible to the best French minds of the eighteenth century, 332; his representation of the unseen world, 392, 399.

Darwinian theory, facts of, with reference to man, 10; replaces as much teleology as it destroys, 80, 204, 206; theistic objection to, 158, 160; as a part of the doctrine of evolution, 183. *See* Natural Selection.

Darwinism, and Other Essays, on

INDEX

genesis of man, 17; on consciousness, 27; on a future life, 78, 81; on a dramatic tendency in the universe, 80, 205; on the legitimate business of science, 162.

Death, as the 'dawning of true life, 82; conception of, an attribute of man alone, 384, 386; idea of, coeval with the beginning of humanity, 388; conception of, coupled with that of an unseen world in primitive thought, 389.

Degeneration of species, 277.

Deity, term *unknowable* as applied to, 104, 106; how far knowable and unknowable, 106, 107, 339; supposed substitution of physical force for direct action of, 158, 160; as quasi-psychical in nature, 188, 349. *See* God, Idea of God, Theism.

Demiurgus, a Gnostic personification of the Creator, 234.

Dependence of man, its part in the theistic idea, 131, 138.

Descartes, René, his hypothesis that animals are automata, 28; his geometry as aid to progress, 121.

Descent through modifications, facts of, with reference to man, 10.

Design, argument from, as explaining scientific facts in the organic world, 176, 177, 182; weakness in, pointed out by Mill, 177, 238; its presentation of the Creator, 177–181; overthrow of, by natural selection, 182, 204; as set forth by Voltaire, 334.

Destiny of Man, The, 3–84; remarks upon the teleology of, 99, 415; proves that evolution gives man the highest place in the universe, 101; printed exactly as delivered at Concord, 109; argument of, repeated in *Everlasting Reality of Religion*, 215.

Devil, as created by the Deity, 179; as creator of the world, in Gnostic theory, 180; Christian conception of, drawn largely from Ahriman, 235.

Diderot, Denis, character of his atheism, 331–333, 395.

Differences in kinds due to the accumulation of differences in degree, 22, 38.

Discrimination, element of, in the production of consciousness, 248–251.

Disembodied souls, our inability to conceive of, 403.

Divine action, theory of, depicting God as swayed by human passions, 114; theory of, as revealed in the workings of the visible universe, 114; manifested in all phenomena, 161, 167, 168; as opposed to natural law, 165, 166; as the cause of special phenomena, 165.

Divine Power as curtailed by power of evil, 234, 235.

Dogs, sense of bereavement in, 385.

Donaldson, J. W., on derivation of name God, in *New Cratylus*, 418.

Dragons of the Jurassic period, 319–321.

Dramatic tendency in nature, not recognized in universe as a whole, 80, 205; indication of, on the earth, 80, 205; not recognized by atheism, 92; recognized in theism, 94; may be recognized as a result of a scientific investigation, 103; recognized in the unity of nature animated by the spirit of God, 220, 242.

Dreams and ghosts in primitive thought, 381.

Duck-bill, Australian, a relic of ancient incipient mammality, 321.

Dulong, P. L., demonstrated the law of correlation of forces in heat, 410.

INDEX

Earth, placed at the centre of the universe in the philosophy of the Middle Ages, 3; place given it in modern science, 7; as the brief abode of the soul, 7; subordinated to man, 20; mental conception of, must be symbolic, 192.
Easter an adoption from nature-worship, 143.
Echoes as explained by theory of other self, 135.
Eclipse and sun-myth, 392.
Eden, rarely alluded to in Old Testament literature, 225; as a Persian paradise, 225. *See* Serpent in Eden.
Edwards, Jonathan, his philosophical writings classed among the glories of English literature, 335.
Egyptians show the result of an oriental type of empire, 60.
Electricity, advance in, in the nineteenth century, 122.
Ellipse used in illustration of nature's workings, 414.
Elohim, in Hebrew religion, 140; man's dealings with, 226, 227.
Emanations, influence of Gnostic theory of, 234.
Emerson, R. W., quotation from, on the subject of a broad view of life, 323.
Energy, creative, the soul as a product of, 67, 80; man as the consummation of, 75, 78; Spencer on the, 104; as God, 104.
England, federation in, 63; political formation of, compared with that of France, 63, 64; colonies of, 64.
English philosophical thought compared with French, 335.
Environment, adjustment of life to, 361–363; adjustment of ideas to, 366.
Epikuros, his idea of gods in their relation to men, 152.
Epilepsy as explained by theory of other self, 135.
Ether, luminiferous, difficulty of conceiving the properties of, 347, 348, 403.
Ethical process, and cosmic process, 284–286, 311, 323; the goal of, is the perfection of human character, 313, 314.
Ethical trend, omnipresent, 322–324.
Ethics, and religion inseparable, 310, 357; and the ghost-world of primitive men, 356, 380, 381; and the unseen world, 356, 357; genesis of, 368. *See* Morality, and Altruism.
Euripides on death as the dawning of true life, 82, 378.
Eve and the serpent in Eden, 225.
Everlasting Reality of Religion, 217, 218, 325–373.
Evil, and the omnipotent creator, 178, 231; theory of, in the Zendavesta, 179, 234; in Christianity, 179, 235; mystery of, 223–267; existence of, a discouraging problem in all ages, 229, 231; Gnostic theory of, 234; and good, distinct sources postulated for, 235, 240; necessary to the existence of morality, 251, 265; God the creator of, 252; Fiske's argument in regard to, misunderstood, 253–255; the course of, traced in spiritual evolution, 265, 266.
Evolution, in relation to man, 17, 18; in relation to the human soul, 19, 20, 207; of physical members, 39, 40; of science, 40, 43; is an advance toward true salvation, 72; teachings of, supply the clue to the teachings of Jesus and Paul, 73–75, 209; as working out a mighty teleology, 102; memorable epochs in organic, 119; the laws of nature are due to the process of, 184, 185; illustrates the unity of nature, 197; varied processes of, expressed in a single universal

formula, 197; spiritual perfection the true goal of, 210, 312–314; theory of, first applied on a grand scale in Spencer's *Principles of Psychology*, 219; process of, is the cosmic process, 285; in reference to plant life, 361, 362; in development of the senses, 364–366; in origin and development of ethics, 368, 369.

Evolution, doctrine of, gives man the highest place in the universe, 75, 100; failure of *Outlines of Cosmic Philosophy* to sum up the full purpose of, 100, 101; alters our conception of the universe, 183; teleological aspect of, 204, 206; is not responsible for mistaken opinions of evolutionists, 218; influence of, in the nineteenth century, 237; the everlasting reality of religion traced in, 310, 359–371.

Excursions of an Evolutionist, on consciousness, 27; on intellectual attainments, 41; on a future life, 76; on prehistoric man, 125; on pagan ideas in Christianity, 143; on mind-stuff, 201.

Experience, as involved in increase of intelligence, 25, 294, 295; as a factor in the career of man, 38; bounds of, transgressed in an assumption of a future life, 78; limits our powers of conception, 187, 344–348, 399, 402; not infinite, 403.

Eye, evolution of, 39; the telescope adds a set of lenses to, 40.

Faith, in the immortality of the soul, 81; in a teleological explanation of the universe, 81–83, 189.

Family, as the primordial unit of society, 46, 305; originated through the prolongation of infancy, 46, 207, 300; gave rise to morality, 46, 47, 54, 207; development of, into the clan, 54, 302.

Faraday, Michael, demonstrated the law of correlation of forces in electricity, 410.

Fatherhood of God, in Athanasian doctrine of the Trinity, 148; in pure monotheism, 240.

Fechner, G. T., and advance of psychology, 126.

Federation, as the highest method of forming political bodies, 62; attempt at, by the Greeks, 62; of the Swiss, 63; of Americans, 63.

Feeling, and molecular movement, in the brain, 77; can be in no sense the product of matter, 77.

Fetichism, and a quasi-human God, 349; its close connection with animism, 354.

Fick, August, his researches in philology, 125; on derivation of the name God, 418.

Final cause, craving for, 189, 203; one of the master facts of the universe, 217.

Final causes, characterized by Bacon, 102; by Huxley, 103.

First Cause, its connection with Athanasian theism, 163, 338; idea of, is supported by modern scientific thought, 338; Agnostics and, 339.

Flower, simile of the watch replaced by that of the, 182–185.

Food, obtaining of, the cause of warfare among primitive men, 55; increase of supply of, and its influence on civilization, 56.

Force, known only as effort overcoming resistance, 97; error of designating God as, 98, 345; illegitimate use of the term, 158, 160; supposed substitution of, for direct action of the Deity, 158, 160, 163; correct use of the term, 159; as the animating principle of the universe, 198, 199; as infinite and eternal Power, 200; finite and infinite, 345, 346.

INDEX

Forces, correlation of, illustrates the unity of nature, 195, 241.
France, compared with England as to political formation, 63; built upon the principle of conquest with incorporation, 63; contest with England for the possession of North America, 64.
French atheism of the eighteenth century, 330–336.
Future life, cannot be demonstrated through lack of experience, 77, 78, 400; belief in, traced in the ghost world of primitive man, 353; ethical element in, 357; Buddhist conception of, 390; Hebrew and Greek idea of, 391; Christian conception of, 392; of the lower animals, 413; the recognition of friends in, 400. *See also* Unseen World, and Immortality.

Galilei Galileo, and the thought of his time, 6, 117, 394.
Geologic study of the earth's surface first placed upon a scientific basis in 1830, 124.
Geological succession, facts of, with reference to man, 11.
Gesta Romanorum, wisdom in the tales of, 258.
Ghosts, their place in primitive philosophy, 134; dreams and, 135, 381; primitive belief in, implies belief in an unseen world, 353, 354; ethics and, 356, 380.
Gnostics, their theory of vileness of matter, 146; their idea of God in connection with the universe, 154; their theory of God and the devil, 180.
God, must be symbolized as in some way psychical, 97, 98, 188, 202, 348; must not be described as force, 97, 98, 345; may be called spirit, 98; as the Infinite Power that is the eternal source of all phenomena, 104, 107, 200, 201, 210; how far knowable or unknowable, 107; difficulty of expressing the idea of, 112, 202, 344–346, 348; symbolic rites and doctrines have usurped the place of, 113; fear that science will rob the world of, 116, 117, 129; anxiety of atheism to prove there is no, 116; derivation of the name, 143, 418; as immanent in the world, 145–149, 162, 167, 170, 201, 333, 337–340; as acting through the powers of nature, 146; as remote from the world, 150–157, 186, 333; as represented in the miracle-plays, 171, 172; as the creator of evil, 252; kinship between the human soul and, 341, 348, 354. *See also* Deity, Creator, and Idea of God.
Godless universe, assumption of a, 164.
Goethe, J. W. von, theism of, 98, 99, 162; quotation from, in regard to the knowledge of God, 105; his simile of the *children* and the mirror, 107; his Faust in regard to the idea of God, 111; his recognition of the unity of Nature, 194; and the problem of the existence of evil, 229.
Good and evil, Parsee theory of, 179, 234; knowledge of, as the serpent's promise to the woman, 225–227; Gnostic theory of, 234; distinct sources postulated for, 235; one cannot exist without the other, 242, 250–252.
Gothic architecture, unintelligible to the best French minds of the eighteenth century, 332.
Greek Church, philosophy of the three greatest fathers of, 146.
Greeks, their attempt at federation, 62; nature worship dominant in their religion, 136, 145; their idea of God as immanent in the world, 139, 145–149, 163, 338;

their power of abstract thought seen in their idea of God, 146.
Gregariousness in higher mammals, 45.
Grimm, J. L. K., on derivation of the word God, 418.

Haeckel, E. H., his opinion that death ends all, 218, 335.
Halibut, cerebrum of, is smaller than a melon seed, 31.
Hamilton, Sir Rowan, 49.
Hand, evolution of, 39, 40.
Harp and its music as a simile of the relation of the soul to the body, 344, 412.
Harrison, Frederic, his shallow criticism of Spencer, 104; his controversy with Spencer on the nature and reality of religion, 217.
Harvey, William, his psychology as aid to progress, 121.
Hearing, origin and development of the sense of, 365.
Heaven of Dante's time shattered by modern science, 6.
Hebrew religion, development of, traced, 140.
Helvétius, C. A., character of his atheism, 331–333.
Hermes and Wodan, 420.
Hermit and the angel, story of, 256–259.
Heyne on derivation of the name God, 418.
Hindu philosophers and pantheism, 91.
Hindus, nature worship dominant in their religion, 136, 145.
History, dawn of, through acquisition of written language, 120; recent growth of the comparative method in, 125.
Holbach, P. H. Thiry, Baron d', 330.
Holy Spirit in Athanasian doctrine of the Trinity, 148.
Hugo, Victor, his *Les Misérables* an illustration of the workings of Christ's methods, 74; quotation from, 211.
Humanity, atheism would degrade, 5; the significance of, enlarged by the Darwinian theory, 14, 75; perfecting of, is to be the consummation of nature's work, 19, 75. *See also* Man.
Humboldt, Alexander von, practically a materialist of the eighteenth century, 219; his *Kosmos* an encyclopædic book without pervading principle of unity, 220.
Hume, David, 330.
Huxley, T. H., *Through Nature to God* dedicated to the memory of, 213; his use of the phrase *cosmic process*, 216, 285; quotation from his Romanes lecture on cosmic process and ethical process, 283; his attitude toward what is outside the limits of the human mind, 397.
Huyghens, Christian, his physics as aid to progress, 121.
Hypothesis, absence of proof in an, does not create a negative assumption where proof is inaccessible, 78.
Hysteria as explained by theory of other self, 135.

Idea of God as affected by Modern Knowledge, 85–210; dedication of, 86; preface to, 89–109; printed exactly as delivered at Concord, 109.
Idea of God, among primitive men, 129–137; as formed through the medium of nature-worship, 138, 145, 146, 150, 152, 170, 201, 202; as formed through the medium of ancestor-worship, 139, 150, 151, 170; first reached adequately in the teachings of Jesus and Paul, 141, 142; in Athanasian doctrine of the Trinity, 147–149; in Augustinian doctrine of original sin, 155, 156; transcends

our powers of conception, 187, 190, 202, 210, 344–348; must be gained by symbolic conception, 190, 346; gradual refinement in the formation of, 354. *See also* Deity, God, and Theism.
Ideas, the adjustment of, to objective facts, 366.
Imagination, as influencing actions, 69; close connection between sympathy and, 69; is the fundamental intellectual difference between civilized men and savages, 69.
Immortality of the soul, cannot be demonstrated through lack of experience, 77, 78; in the light of the doctrine of evolution, 79–83; belief in, as a supreme act of faith, 82; conception of, an attribute of man alone, 379; genesis and evolution of the belief in, 380–390, 413–415. *See also* Future life, and Unseen world.
Improvableness of man, 49.
Inanimate objects, ghosts or souls of, in primitive philosophy, 135.
Inconceivability, of a fact, does not imply its non-existence, 187, 188; with reference to the unseen world, 402, 404.
Indians, American, clan system among, 302.
Individuality in connection with infancy, 34.
Industrial civilization, diminishes warfare, 57, 65; extends the sphere of moral obligation, 58; warfare of, against barbarism, 60, 62.
Infancy, prolongation of, modifies tendency of heredity, and paves the way for inventiveness and progress, 34, 35, 38, 261; prolongation of, and increase of intelligence, mutual reaction of, 36, 37, 299, 387; gave rise to society through the family and clan, 46, 207, 304, 387; altruism due to, 51, 207; theory of, forms Fiske's especial contribution to the doctrine of evolution, 215, 261.
Infinite personality, an expression not justifiable, 188.
Instinct of animals, 25, 28, 42.
Intellectual progress of man in the nineteenth century, 126, 127.
Intellectual variations, importance of, in the genesis of man, 17. *See* Psychical variations.
Intelligence, growth of, and prolongation of infancy, mutual reaction of, 36, 37, 299; growth of, in man greater than moral growth, 51, 70; evolution of, 299, 322; finite and infinite compared, 344, 345.
Isaiah, prophet, on the ways and thoughts of God, 202, 340.
Islands of the Pacific, docility of savages of, 55.

Jehovah, development of Hebrew conception of, 140; originally one of the elohim, 140; idea of, freed from its limitations of nationality by Jesus and Paul, 141; in the Eden myth, 226.
Jesus Christ, his Sermon on the Mount interpreted by the teachings of evolution, 73; his conception of a state of society in which strife is eliminated, 75; transformed the idea of Jehovah to the idea of God, 141; as heralding the time when warfare shall cease, 142; teachings of, will endure as long as man endures, 142.
Jesus of History, its connection with *The Idea of God*, 109.
Jesus of Nazareth and the Founding of Christianity, the title of a proposed work, 108.
Jews, their conception of Jehovah, 140; their depth of ethical feeling, 140; their conception of immortality, 391.
Joule, J. P., 410.

INDEX

Jurassic period, oviparous dinosaurs of, 319.

Kangaroos, the stage which they represent in the development of mammals, 321.
Kant, Immanuel, acceptance of his nebular hypothesis, 124; on God as creator by free and understanding action, 188.
Kepler, Johann, and the simile of the salad, 373.
Kindness, man's slow progress in, 70.
Kleanthes, theistic conception of his hymn to Zeus, 142.
Knowledge, effect of the advance of, on our idea of God, 116; rapid increase of, in the nineteenth century, 119–130.

Laborer, the law of use and disuse applied to the, 69.
Lalande, J. J. L. de, his remark that he had swept the heavens with his telescope and found no God there, 332, 335.
Lamb, Charles, his story of the roast pig, 280.
La Mettrie, J. O. de, his theories suited to his time, 218, 219; echoed by Büchner, 395.
Language, recent achievement in the scientific study of, 124, 125; invention of, 299, 300.
Laplace, P. S. de, his remark on not needing the hypothesis of God, 153, 333.
Lares, worship of, 141.
Latin idea of God as remote from the world, 150–157.
Law, reign of, in nature, 338.
Leibnitz, G. W. B. von, his objections to Newtonian law of gravitation, 158, 162; on the Creator and his world, 180, 232.
Lessing, G. E., theism of, 98, 99, 170.
Life, growing predominance of the psychical, 42; earthly, sacrificed for the spiritual, 43; and its environment, correspondence between, 361–363; love of, is universal, 384.
Life Everlasting, 375–420.
Likeness and unlikeness, element of, in the formation of conscious states, 248–251.
Linnæus, Carolus, his remark on God's glory seen in the unfolding of a blossom, 360.
Locke, John, and atheism, 394.
Locomotion, changes wrought in, within a few years, 122.
Logic, advance in, during the nineteenth century, 126.
Lucretius, philosophy of, 153.
Lyell, Sir Charles, placed geologic study of the earth's surface on a scientific basis, 124.

Macaulay, T. B., on the battlefield of Neerwinden, 273.
Machinery, developments of, within the memory of living men, 122; influence of its development on the political conditions of society, 122.
Mackay, R. W., his *Religious Development of the Greeks and Hebrews* on storm-spirit, 420.
Majority, the, or disembodied souls, 403.
Mammals, and motherhood, 320; development of, 320; victory over oviparous dinosaurs, 320.
Man, placed at the centre of the universe in the theology of the Middle Ages, 4, 6; his place in nature as affected by the Copernican theory, 6; his place according to the Darwinian theory, 10, 13, 14, 19; genesis of, 16–18, 287–290; differs little in structure but enormously in intelligence from the highest apes, 17, 18, 260, 288; can never be supplanted by a higher race, 18; the

earth and its living things subordinated to, 20; evolution of, through change of action in natural selection, 16, 23, 36, 47, 120, 206, 260, 289, 297; through increase of cerebrum, 30, 31, 47; through dawning of consciousness, 32; through prolongation of infancy, 33, 36, 207, 291, 292, 299; progressiveness of, 35, 47, 299; progress of, through the rise of the family, 46, 47, 291, 300; improvableness of, 49–52; progress of, through the establishment of the clan, 54, 302; through industrial civilization, 56; through political development, 59; through processes of direct adaptation, 68, 207, 208; through the casting off of his brute inheritance, 72; action of natural selection on, modified by social conditions, 68, 207–209, 261, 262; as the consummation of creative energy, 75; as the chief object of Divine care, 75, 209; given by the doctrine of evolution the highest place in the universe, 75, 100; his ultimate salvation to be achieved through ages of moral discipline, 209; as participator in the Creator's work 236; his acquisition of speech, 299, 300.

Manichæism, its theory of evil as distinct in source and opposed to the good, 179, 235.

Manipulation as one of the two coöperating factors in intellectual progress, 40.

Marital relation, beginning of the permanency of, 301.

Maritime discoveries of the fifteenth century mark an epoch in human progress, 120.

Martineau, James, on God, the Creator, 180; his writings classed among the glories of English literature, 335.

Materialism, as holding that mind is the product of matter, 4, 342, 343, 405; its connection with atheism, 4; its assumption that there is no future life, 77, 78, 82, 342; discredited by doctrine of evolution, 218; of the eighteenth century contrasted with the theism of Voltaire, 218; weakness of, 341–346; as substituting the term *force* for Deity, 341, 345.

Maternal affection, permanent establishment of, 300, 301; the earliest kind of altruism, 318; evolution of, traced, 318–320.

Matter, mind not a product of, 77, 344; indestructibility of, 198; all motions of, are manifestations of force, 198; has no real existence apart from mind, 200; as a sum of conscious states, 201; vileness of, 232.

Mediums, belief in, hardly merits notice in a serious philosophic discussion, 402.

Mental plasticity and infancy, 34.

Metaphysics, advance of, in the nineteenth century, 126.

Microscope, enlarges the scope of sight, 121.

Mill, J. S., on the belief that like causes must be followed by like effects, 81; advance of logic in his time, 126; points out a weakness in the argument from design, 177; on the omnipotence of the Creator, 180, 235, 236; on man as a participator in the work of God, 236; character of his philosophy, 237, 238.

Mind, can be in no sense the product of matter, 77, 344; matter has no real existence apart from, 200, 201; always associated with matter in our experience, 398.

Mind-stuff, universe of, 201, 244; primordial, in consciousness, 248.

Miracle-plays, the anthropomorphic conception of, 172.

INDEX

Mivart, St. George, his remark on the difference between man and ape, 288.
Molecular physics, advance in, during the past fifty years, 123.
Moleschott, Jacob, his remark "No thought without phosphorus," 332, 335, 404.
Moloch, a nature god, 140.
Molsa, Francesco, his epigram on the death of Pompey, 377.
Monism, 339.
Monotheism, development of, 138–144; as developed in Greek thought through scientific generalization, 139; as found in the Jewish Jehovah, 140; first complete form of, found in the teachings of Jesus and Paul, 141; derived from polytheism by a slow evolution, 202, 350, 351; teaching of modern science leads to a pure form of, 240.
Moral growth in man less rapid than intellectual growth, 51, 70.
Moral ideas, origin and development of, through the cosmic process, 304–308, 311, 324.
Morality, prolongation of infancy and rise of, 46, 207; its connection with the modification of the action of natural selection, 262, 263; no method of reasoning in its genesis and evolution, 307, 308. *See also* Altruism, and Ethics.
Motion, continuity of, 198.
Müller, Eduard, on the derivation of the name God, 418.
Müller, Max, on the derivation of the name God, 419.
Musical sounds used in illustration of conscious states, 246.
Mystery of Evil, 223–267; supplements certain points in *Idea of God*, 215.
Mythology, study of comparative, is still in its infancy, 125.
Myths and Myth-Makers, on nature myths the foundation of all mythology, 134; on other self and ghosts, 135; on ancestor worship, 136; on Zulu worship of the Great Father, 150; on Ahriman and Ormuzd, 179; on Wodan, or Odin, 420.

Natural laws, the result of a process of evolution, 185, 337; our limited comprehension of, 220.
Natural selection, general facts of, with reference to nature, 12, 16; the point at which its action changes, 16, 23, 36, 47, 120, 206, 260, 289, 297; as subordinate to man's selection, 20; its action modified by social conditions, 67, 68, 207, 209, 261, 262; discovery of, a matter of recent date, 124; overthrows the argument from design, 182; teleological meaning of, 206; its part in leading to the conception of the unity of nature, 219; connection between the modification of its action and morality, 263; methods of, 364.
Nature, belief in the constancy of, 81; strife in, 178, 273–275; as a unit animated by the omnipresent spirit of God, 220; beauties of, 271; rejuvenating life of, 272; epochs in the working of, 414. *See also* Unity of Nature.
Nature-worship, confused with ancestor-worship among primitive men, 136, 145; dominant in the religions of the Hindus, Greeks, and Teutonic race, 137; the theism reached through the medium of, 145, 146, 150, 152, 170, 201, 202.
Nebular hypothesis, discloses no dramatic tendencies in nature, 80; its soundness illustrated by its survival of the modern enlargement of knowledge, 124.
Neerwinden, battlefield of, covered with poppies, 273.

INDEX

Negative assumption not created by lack of proof where proof is inaccessible, 78.

Nervous system, in higher orders matured after birth, 25, 295, 296; relation between thought and the, is one of concomitance, 411, 413.

Newton, Sir Isaac, teachings of science misunderstood in the day of, 117; his astronomy as aid to progress, 121.

Newtonian theory of gravitation, theistic objection to, 158; acceptance of, recent, 195; illustrates the unity of nature, 195; teaching of, prohibited in Salamanca, 393.

Niagara, sound of, used to illustrate the character of consciousness, 250.

Old Testament, development of Hebrew religion in, 140.

Omnipotence of the Creator, questioned, 177; sacrificed in favor of his benevolence, 179, 180.

Omnipresent Energy, not recognized by Atheism, 93; as recognized by Pantheism, 93; as recognized by Theism, 94; as the living God, 94.

Opossums, the stage which they represent in the development of mammals, 321.

Orange used in illustration of symbolic conception, 191.

Organic development, memorable epochs in, 119.

Oriental type of empire, 60.

Origen, idea of God as conceived by, 146, 170.

Original sin, is the brute-inheritance of man, 72; Augustine doctrine of, 155–157.

Ormuzd and Ahriman, 179; in connection with the story of the serpent in Eden, 226.

Other self, hypothesis of, in primitive philosophy, 134; explains hysteria, epilepsy, shadows, echoes, and reflections, 135; of animals, plants, and inanimate objects, 135; of dead ancestors, 136; primitive idea of, as connected with our conception of the immortal soul, 381.

Outlines of Cosmic Philosophy, on materialism, 4; on genesis of man, 17; on consciousness and molecular motion in the brain, 30; on cerebral differences between men and animals, 32; on vision and manipulation, 40; on social relations, 45; on the family as the unit of society, 46; on warfare and the family, 54; on rise of empires, 59; on natural selection and civilized man, 68; on teleology and Darwinism, 80, 204; on the setting forth of a theory of theism, 95, 98, 101; criticised by "Physicus" and Pollock, 95; explanation of the idea of God in, 96–98; alleged rejection of theism in, 96; a new chapter needs to be added to, 100; failure of, to sum up the full purpose of evolution, 100, 101; on Deity, how far knowable and unknowable, 107; on primitive idea of the universe, 133; on Laplace's statement of not needing the hypothesis of God, 153; on the legitimate business of science, 162; on substitution of physical force for divine action, 166; on omnipotence of the Creator, 180; on conception of Divine Power, 201.

Oviparous dinosaurs, of the Jurassic period, 319; rivalry between viviparous mammals and, 320.

Pain cannot exist without pleasure, 250, 251.

Palæontology, foundations of, laid within the nineteenth century,

124; teaches the unity of nature, 241.
Paley, William, his theism contrasted with cosmic theism, 170; his argument from design, 175–190, 238, 334; theism of, overthrown by natural selection, 183, 206.
Pantheism, question as to whether it is the legitimate outcome of modern science, 89; vague use of the term, 90, 91; its presentation of the world of phenomena, 93.
Parsee theory of creation, 234.
Patron saints, worship of, a survival of the worship of tutelar deities, 143.
Paul, Apostle, his conception of the war in man's nature, 73; freed the idea of Jehovah from its national limitations, 141; teachings of, will endure as long as man endures, 142; story of Eve's temptation first assumes prominence in the writings of, 225; on unknowableness of God, 340.
Paulus Diaconus, on pronunciation of Wodan, 419.
Penates, worship of, 141.
Pentateuch, story of the serpent in Eden in, 225.
Persians, ancient, show the result of an oriental type of empire, 60.
Persistence of force manifested throughout nature, 198.
Persistence of species, 315; assured by protection of offspring, 316.
Personality incompatible with infinity, 97, 345.
Personification, of natural forces by primitive man, 133–135; of "force," 158; of physical forces compared with polytheism, 163.
Petit, A. T., demonstrated the law of correlation of forces in heat, 410.
Philosophy of the plan of salvation, 180.
Phosphorus, Moleschott's remark about its relation to thought, 332, 335, 404.
Physical variations, when abandoned by natural selection for psychical variations, 16, 23, 38, 47, 207, 290.
"Physicus," his criticism of *Outlines of Cosmic Philosophy*, 95, 102.
Pianist, training of faculties necessary to a, 29, 293.
Picton, J. A., his *Mystery of Matter* on meditations of a savage, 417, 418.
Pitch, musical, used in illustration of conscious states, 247.
Pitris and Yama in Vedic religion, 136.
Plant life, adjustment to its environment, 361, 362; the shrinking from death in, 384.
Plato, his idea of God as remote from the world, 154; on limitation of the Creator's power, 180, 232; his horror of "brute matter," 236.
Pleasure cannot exist without pain, 250, 251.
Political communities, as arising through conquest without incorporation, 60; as formed by conquest with incorporation, 61; as formed by federation, 62–64; tendency toward larger, seen in history, 64.
Pollock, Frederick, his *Spinoza* on Pantheism, 91; on *Outlines of Cosmic Philosophy*, 95, 102.
Polyp and bloodhound, compared in reference to adjustment to environment, 363.
Polytheism, decline of classic, at the beginning of the Christian era, 141; monotheism derived from, 202, 350, 351.
Pompey, death of, 377.
Positivism, satisfied to consider the universe as under a reign of law,

338; on immortality of the soul, 354, 355.
Power, Infinite, applied to God in an erroneous sense, 97; the eternal source of all phenomena, 104, 107, 200, 210; as the cause of conscious states, 104, 201; as the living God. *See also* God, Idea of God, Deity.
Prehistoric time, duration of, 37.
Priestley, Joseph, his discovery of oxygen, 123.
Primeval philosophy, still exists among savage tribes, 133.
Primitive men, universal warfare of, 53.
Primitive thought, kernels of truth in, 382, 389.
Progress, origin of the capacity for, in man, 35, 47; periods of marked advance in man's, 120.
Protective tariff, so called, a survival of barbarous modes of thought, 57.
Psychical states, in the production of consciousness, 245–248; illustrated in musical sounds, 246.
Psychology, advance in, during the nineteenth century, 126.
Ptolemaic astronomy, absurdity of, in the light of modern knowledge, 389.
Purgatory of Dante's time shattered by modern science, 5.
Purpose, element of, in the universe, 103.

Red, the color, used in illustration of the character of consciousness, 248.
Reflections explained by theory of other self, 135.
Reflex actions, tendency to perform them completely organized in the nervous system before birth, 24, 296; facts of, with regard to consciousness, 28.
Religion, theory of, as outlined in *Destiny of Man*, and *Idea of God*, 107, 108; so-called conflict between science and, 157, 158–168, 186, 372; Spencer's theory that the ultimate form of, is derived from the primeval form of, 217; Spencer's and Harrison's controversy upon the nature and reality of, 217; genesis of, 309, 368; its relation to ethics, 310; its everlasting reality traced in the doctrine of evolution, 310, 359–371; its first postulate the quasi-human God, 349–352; its second postulate the undying human soul, 353–356; its third postulate the ethical significance of the unseen world, 356–359; summary of the argument on, 367–372; destruction of doctrines in, 359. *See* Theism.
Religious thought, revolution in, caused by the advance of modern knowledge, 128.
Rise of man as beginning in the loss of paradise, 228.
Roman Empire, its method of conquest with incorporation, 61.
Romanes lecture of Huxley at Oxford, 1893, replied to by Phi Beta Kappa oration at Harvard, 1895, 215.
Romans, their adoption of Greek divinities, 137; their conception of Deity inferior to that of the Jews, 141; anthropomorphism of, 171.

St. Thomas, his *Summa* and its time, 392.
Salvation of man, process of evolution an advance toward, 72; to be achieved through ages of moral discipline, 209.
Sarameyas and Wodan, 420.
Satan, and the serpent in Eden, 226.
Savage, brain of, compared with that of civilized man, 31, 49; his crude fancies contain germs of truth, 382.

INDEX

Scepticism of our day, 335, 336.
Schlegel, Friedrich, his discovery of the kinship between the Aryan languages, 124, 125.
Schleiden, M. J., 124.
Schleiermacher, F. E. D., theism of, 170.
Scholar, cerebral surface of the brain of, 32.
Schwann, Theodor, 124.
Science, opposition of the church to the teachings of modern, 5; evolution of, 40, 43; charged by theologians and atheists with substituting blind force for God, 116, 117; so-called conflict between religion and, 157, 158–168, 186, 372; legitimate business of, 161; justifies the belief in God as omnipotent and the author of good and evil, 240–242; effect of modern, on philosophy and metaphysics, 395–397.
Scientific discoveries of the nineteenth century transcend all previous accomplishment, 121–128.
Scott, Sir Walter, quotation from his *Helvellyn*, 385.
Secession, the war of, fought in behalf of federalism, 65.
Self-government, of England, 63; tendency toward, shown in history, 64.
Senses, how the evolution of the, expands the world, 364–366.
Sermon on the Mount, clue to the meaning of, found in the highest development of man, 73, 74.
Serpent in Eden, story of, probably first placed in the Pentateuch after return of the Jews from Babylon, 225; first assumes prominence in the writings of St. Paul, 225, 228; as the Persian Ahriman, 225, 226; not identified with Satan, 226; his promise to the woman, 225–227.
Shadows, as explained by theory of other self, 135.
Shakespeare's brain and that of a savage compared, 49.
Shaler, N. S., his *Individual* on man's recognition of death, 386.
Sight, origin and development of, 365.
Signatures, doctrine of, in the light of modern knowledge, 389.
Sin, necessity of, to the existence of morality, 251, 265; Fiske's argument in regard to the necessity of, misunderstood, 253–255.
Skeat, W. W., on derivation of the name God, 418.
Society, origin of, 45, 207; development of, through the clan, 54; development of, through industrial civilization, 56; growth of, through political development, 60–66; perfect state of, reached through evolution, 72, 207, 208; cosmic and ethical process of progress in, 284.
Son of God, an Athanasian doctrine of the Trinity, 148.
Soul, its abode on earth, 7; as the product of creative energy, 19, 20, 67, 80; Platonic view of, 27; change in the relation to the body in the course of development, 44; always associated with the body in our experience, 77; immortality of, 77, 78, 353, 354; as the climax of nature's creative work, 83; as a divine effluence, 83; kinship between God and, 341, 348, 354; and other self, 381; question as to when it comes into existence, 414.
Special-creation hypothesis, 19, 372.
Spectrum analysis, disclosures of, illustrate the unity of Nature, 196, 219, 241.
Speech, invention of, 299, 300.
Spencer, Herbert, his remark that the telescope adds a set of lenses to the eye, 40; on like causes followed by like effects, 81; his doctrine of the Unknowable, 104;

INDEX

his essay on Retrogressive Religion, 104; and advance of psychology, 126; on persistence as the ultimate test of reality, 189; proved universal evolution a necessary consequence of persistence of force, 198; controversy with Harrison, 217; on development of religion, 217; his *Principles of Psychology* was the first application of the theory of evolution on a grand scale, 219; gulf between his philosophy and that of Comte, 237; his *Biology* on the modification of the action of natural selection, 261; on the relation of life to its environment, 361–363; his remark on the fact that physical problems lead to metaphysical ones, 396; on consciousness and molecular motion in the brain, 409; alteration of opinion in final edition of his *First Principles*, 409.

Spinoza, Benedikt or Baruch de, theism of, 162, 170; his recognition of the unity of Nature, 194.

Stewart, Balfour, his *Paradoxical Philosophy* on Kepler and the salad, 373.

Stoics, pantheism and, 91; philosophy of, 146.

Strife in nature, 178, 273–275.

Struggle for existence, in organic life, 16, 51, 207, 274, 276, 279, 283; and the bringing forth of the soul, 19, 67; will disappear in higher orders, 67; in human progress, 207; in the development of civilization, 278.

Sub-consciousness or elementary psychical states, 245–248.

Summer field and what it tells us, 271–275.

Survival of the fittest, working of the law of, 277, 364; has no relation to moral ends, 285.

Sweetness cannot exist without bitterness, 250.

Swiss, federation of the, 63.

Symbolic conceptions, of Deity, 113, 190, 346; of complex objects, 192; danger of framing illegitimate, 193.

Sympathy, rudimentary form of, in higher mammals, 46; arose in man with the genesis of the family, 47; and the development of altruism, 51; close connection between imagination and, 69; future development of, 71, 208.

Tait, P. G., his *Paradoxical Philosophy* on Kepler and the salad, 373.

Teachableness of animals, 34.

Teleological explanation of the universe, demanded by man, 188; question of the validity of, 189; as the only explanation, 210, 220.

Teleology, and Darwinism, 80, 204, 206; of the *Destiny of Man*, explained, 99; the working out of, by evolution, 102; considered worthless as a means of investigation, 103.

Telescope adds an extra set of lenses to the eye, 40, 121.

Tennyson, Alfred, Lord, quotations, 217, 326, 360; idea of the Creator in his *Arthur*, 234.

Teraphim, or tutelar household deities, 140.

Tertullian, theism of, contrasted with cosmic theism, 170.

Testimony, absence of, and negative assumptions, 404.

Theism, the world of phenomena as presented by, 93, 94; anthropomorphic and cosmic, compared, 98, 169–174; of Athanasius, 147, 163, 167; as an outgrowth of nature-worship and of ancestor-worship, compared, 150, 152, 170; of Augustine, 155, 162; must retain something of anthropomorphism, 170, 173, 186, 351, 352; reinforced by doctrine

INDEX

of evolution, 218. *See also* Idea of God.

Theistic idea, element of dependence in, 131; traced in personification of natural forces by primitive men, 133; in theory of ghosts, 134; in ancestor-worship, 136; in Jewish conception of Jehovah, 140; in the monotheistic teachings of Jesus and Paul, 141. *See also* Idea of God.

Theology, advance of, in the nineteenth century, 126.

Thorpe, Benjamin, his *Northern Mythology* on derivation of the name God, 418.

Thought and molecular motion in the brain, 77.

Through Nature to God, 211–373; on an unseen world, 415.

Time, duration of prehistoric, 37.

Tir nan Og, legend of the land of, 273.

Tolstoi, Count L. N., the problem of the existence of evil in his *War and Peace*, 229.

Tones, used in illustration of conscious states, 247.

Total depravity, theory that gave rise to doctrine of, 180.

Touch, development of the sense of, 364.

Town, mental conception of, must be symbolic, 192.

Township, originated in the stockaded dwelling-place of a clan, 54.

Tradition as the beginnings of literature and science, 300.

Trinity, doctrine of the, Athanasian view of, 147.

Tutelar deities, merged into a single national deity, 140.

Tyndall, John, on conscious thought and molecular motion in the brain, 409.

Ueberwundener Standpunkt, ein, an expression of an attitude of mind, 220.

Undulatory motion illustrates the unity of nature, 195, 219.

United States, federal union in, 63; principles represented in the two great wars of, 65.

Unity of Nature, demonstrated by modern science, 194, 241; illustrated in the law of gravitation, 195; in correlation of forces, 195, 219, 241; in disclosures of spectrum analysis, 196, 219, 241; in the law of evolution, 197, 219.

Unknowable, Spencer's doctrine of the, 104–106, 340; the use of the term criticised as applied to Deity, 104, 339; term approved when properly understood, 106; how far Deity is, 107.

Unkulunkulu, Zulu worship of, 150.

Unseen Universe, its authors' expression of faith, 81.

Unseen World, on consciousness, 27; on a future life, 76, 78, 81; on theistic idea in Kleanthes' hymn to Zeus, 142; on Gnostic idea of God in connection with the world, 155.

Unseen world, and the ghost-world of primitive man, 217, 353; and a quasi-human God, 353, 357; ethical element in the conception of, 356, 357, 370; idea of, coeval with the beginnings of humanity, 368, 387, 389; summary of the origin and development of the belief in, 368; summary of the arguments for the existence of, 369, 370; as conceived in the twelfth and thirteenth centuries, 392; revolution in idea of, through Copernican theory, 393; and modern science, 394, 398; transcends our powers of conception, 399, 400. *See also* Future life, and Immortality.

Uranos, as the father of gods and men, 137.

Use and disuse, law of, 69.

INDEX

Variations in intelligence, 17.
Vendidad on the creation of the world, 234.
Vice, reason for the slow decrease of, 68.
Virgin Mary, worship of, a survival of the worship of the Berecynthian Mother, 143.
Vision, one of the two coöperating factors in intellectual progress, 40.
Volition, idea of, in primitive explanation of physical phenomena, 164; finite and infinite compared, 345.
Voltaire, F. M. A. de, theism of, contrasted with cosmic theism, 170; and the argument from design, 175; and the problem of the existence of evil, 229; his home at Ferney, 327; parish church dedicated by, 328, 334; his attitude toward the church and theology, 329; his use of the term "The Infamous," 330; character of his theism, 334; questions when the soul comes into existence, 414.

Wallace, A. R., his theory of the change in the direction of the working of natural selection, 289, 290.
Warfare, place of, in the evolution of man, 51; chronic state of, among primitive men, 53; necessity of, 55; diminished through industrial civilization, 57, 64–66; of industrial civilization against barbarism, 60; incident upon political development, 60; necessity of, at an end, 62; gradual elimination of, 65–67, 208; the time when it shall cease heralded by Jesus, 142.
Watch, simile of, replaced by that of the flower, 182–185.
Westermarck, Edward, on permanency of marital relation among savages, 301.
Whately, Richard, advance of logic before and after his time, 126.
Wilberforce, Bishop, 393.
Will, quasi-human, as underlying physical phenomena in primitive philosophy, 164. *See* Volition.
Wodan, and the name God, 143, 418–420.
World, the best that could have been made out of the materials at hand, 180, 232.
Wright, Chauncey, his term cosmical weather, 92.
Wundt, Wilhelm, and advance of psychology, 126.

Yuletide, an adoption from nature-worship, 143.

Zendavesta, Ahriman and Ormuzd in, 179.
Zulus, their worship of a first ancestor, the Great Father, 150.

THE END

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